UNIVERSITY OF CALIFORNIA
MUSEUM OF VERTEBRATE ZOOLOGY

J.E. Simpson,
1938.

Sonora, 1938.

[J.E. Simpson as assistant to S.B. Benson]

= Catalogue

= March 17 to May 30, 1938.

= pp. 1x to 21, incl.

= specimens no. 33 to 461, incl.

= General Account

= March 13, to June 2, 1938.

= pp. 21 to 91, incl.

= Species Account

= March 17 to May 30, 1938.

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JESimpson,
1938.

Catalogue

[Specimen Account,

pp 1x–21 incl., specimen 33 to 461 incl.]

March 17 to May 30, 1938.

2650 ft., La Misión, 2 mi. w. Magdalena, Sonora

March 17, 1938

33 ♂ *Dipodomys merriami: 250-142-39-14N-11c; wt 50.09g

34 ♂ Dipodomys merriami: 255-149-43-13N-10c; wt. 41.5g.

35 ♂ Perognathus intermedius: 109+-35+-7N-4c; wt. 10.7g.

36 ♂ Perognathus penicillatus: 162+-94+-21-9N-6c; 11.8g.

37 ♂ *Perognathus baileyi: 215-119-28-10N-7c; 23.5g.

38 ♀ 2 emb. Peromyscus eremicus: 195-98-21-27N-19c; 25.1g.

39 ♀ no emb. Peromyscus eremicus: 172-83-18-17N-15c; 17.6g.

40 ♀ no emb. Peromyscus eremicus: 171-90-18-18N-16c; 17.0g.

March 18, 1938

41 ♂ *Perognathus baileyi: 237-134-29-10N-7c; 34.0g.

42 ♂ Perognathus baileyi: 215-114-26-9N-7c; 26.3g.

1500 ft., 43.5 mi. w. Magdalena, Sonora

March 19, 1938

43 ♂ Citellus tereticaudus: 223-79-36-7N-3c, prep. by M. Delgadillo. collected by S.B. Benson

775±; Tinajas de los Papagos, Sierra del Pinacate, Sonora.

March 22, 1938

44 ♂ Perognathus intermedius: 179-97-21-8N-5c; 12.2g.

45 ♂ Perognathus intermedius: 160-83-20-7N-4c; 12.6g.

46 ♂ * Dipodomys merriami: 247-144-38-14N-11c; 38.9g.

47 ♂ Dipodomys merriami: 265-157-35-13N-11c; 41.9g.

48 ♂ *Dipodomys merriami: 251-143-36-15N-11c; 44.9g.

49 Uta

50 Uta

51 Uta

* CHEEK-POUCH CONTENTS SAVED.

775± ft., Tinajas de los Papagos, Sierra del Pinacate, Sonora

March 22, 1938, continued

52 Uta

March 22, 1938, continued — wt.

NO EMB. 53♀ Myotis californicus: 78 - 38 - 7 - 19 - 12 - 2.4g

54♂ Pipistrellus hesperus: 66 - 27 - 5 - 12 - 9 - 3.5g.

55♂ Pipistrellus hesperus: 71 - 27 - 6 - 12 - 10 - 2.1g

56♂ Pipistrellus hesperus: 69 - 29 - 5 - 11 - 9 - 3.5g.

March 23, 1938

NO EMB 57♀ Perognathus intermedius: 127+ - 50+ - 20 - 7 - 4 - 9.0g.

March 24, 1938

58♀ no emb Neotoma lepida bensoni: 289± 128± 30 - 31 - 20 - 106.0

one emb 59♀ Neotoma lepida bensoni: 299 - 150 - 29 - 30 - 25 - 115.2

1000± ft., 2 mi. ne Tinajas de los Papagos, Sierra del Pinacate, Sonora

March 24, 1938, continued

60♂ Perognathus intermedius: 165 - 87 - 20 - 7 - 4 - 12.0g

61♂ Perognathus intermedius: 170 - 98 - 21 - 6 - 4 - 12.0g

62♂ Perognathus intermedius: 172 - 99 - 21 - 7 - 5 - 13.8g

63♂ Perognathus intermedius: 174 - 99 - 21 - 8 - 6 - 13.9g

* no emb 64♀ Perognathus intermedius: 105+ - 30+ - 21 - 7 - 5 - 10.3g

65♂ Perognathus intermedius: 166 - 93 - 21 - 7 - 4 - 11.9g.

66♂ Perognathus intermedius: 162 - 91 - 21 - 7 - 5 - 13.0g

67♂ Perognathus intermedius: 140+ - 70+ - 21 - 7 - 4 - 13.0g

68♂ Perognathus intermedius: 154 - 84 - 22 - 7 - 4 - 11.0g.

850± ft., Paso MacDougal, Pinacate Region, Sonora

March 25, 1938

3 emb 69♀ Peromyscus ~~crinitus~~ eremicus: 214 - 112 - 21 - 21 - 18 - 22.3g

70♂ Peromyscus ~~crinitus~~ eremicus: 199 - 105 - 21 - 21 - 17 - 21.8g

* CHEEK-POUCH CONTENTS SAVED.

850± ft., Paso MacDougal, Pinacate Region, Sonora

March 25, 1938, continued. wt.

71 ♂ Peromyscus crinitus: 175-96-19-18N-17C- 11.9g

72 ♂ *Perognathus penicillatus: 182-102-23-9N-6C- 17.1g

73 ♂ *Dipodomys merriami: 231-135-35-14N-11C- 33.5g

SKULL ONLY

74 ♂ *Dipodomys merriami: 253-150-38-15N-11C- 41.5g

75 ♀ nonemb Peromyscus crinitus: 188-109-18-20N-16C.

March 26, 1938

800± ft., Cerro Colorado, 28 mi. w. Sonoita, Sonora

76 ♀ no emb *Dipodomys merriami: 252-148-40-14N-11C- 34.4g

775± ft., Tinajas de los Papagos, Sierra Pinacate, Sonora

March 24, 1938, continued

SKULL ONLY

77 PICK UP Canis latrans mearnsi (pick-up by M. Delgadillo).

900± ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora.

~~78~~ March 27, 1938

78 ♀ NO EMB *Perognathus penicillatus: 174-89-21-8N-5C- 11.5g

79 ♂ Perognathus " 174-98-23-7N-5C- 12.0g

80 ♀ NO EMB. Peromyscus eremicus: 210-116-20-21N-17C- 21.0g.

81 ♂ Peromyscus eremicus: 194-106-22-19N-16C- 18.7g

82 ♂ Peromyscus eremicus: 184-99-19-17N-15C- 17.5g

83 ♀ NO EMB Peromyscus eremicus: 198-110-19-20N-17C- 18.0g

84 ♂ Dipodomys merriami: 241-139-36-14N-10C- 34.7g

85 ♀ NO EMB *Dipodomys deserti: 328-198-51-17N-14C- 68.5g

86 ♀ NO EMB Neotoma albigula: 304± 144± 31-29N-25C- 108.0g

March 28, 1938

87 ♂ Neotoma albigula: 340-164-34-29N-26C- 138.5

88 ♂ Selasphorus rufus (Rufous Hummingbird) 3.6g

1100± ft., Crater Elegante, 34 mi. w. Sonoita, Sonora

March 29, 1938

89 ♂ *Perognathus baileyi: 206-113-27-10N-6C- 20.0

90 ♂ Peromyscus crinitus: 186-115-20-19N-16C- 12.2

* CHEEK-POUCH CONTENTS SAVED.

1100± ft., Crater Elegante, 34 mi. w. ~~Elegant~~ Sonoita, Sonora.
March 29, 1938, continued.

91 ♂ Peromyscus crinitus: 173-95-19-21N-18C- 10.6 g.

92 ♂ Peromyscus crinitus: 186-104-19-19N-16C- 12.0 g.

93 ♀ NO EMB Peromyscus crinitus: 182-100-19-20N-18C 11.3 g

675± ft., 3 mi. s Cerro Colorado, 28 mi. w. Sonoita, Sonora.

March 30, 1938

94 ♂ Onychomys torridus: 151-57-20-19N-15C- 27.7 g.

50± ft., Punta Peñasca, Sonora.
March 31, 1938

95 Uta

96 Uta

97 Uta

98 Uta

99 Uta

100 ♂ Crotalus t.l. 1221.0 mm 1047.0 g

y m. Delgadillo. 101 Crotalus t.l. 910.0 mm 315.0 g

April 1, 1938

102 ♂ Perognathus longimembris: 121-68-17-6N-4.5C- 6.3 g.

103 ♂ Perognathus longimembris: 122-69-19<-6N-4C- 6.0 g.

104 ♂ Perognathus intermedius: 171-97-20-7N-4C- 10.5 g.

105 ♂ Perognathus intermedius: 129+-52+-20-7N-5C- 10.8 g.

106 ♂ Peromyscus eremicus: 192-103-21-19N-16C- 25.4 g.

107 ♂ Neotoma lepida: 302-145-32-32N-27C- 136.5 g

April 2, 1938

108 ♂ Perognathus intermedius: 160-90-21-8N-5C- 10.1 g.

50± ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora
April 3rd, 1938

109 ♂ *Perognathus intermedius: 172-100-21-8N-4C- 12.2 g

110 ♂ Perognathus intermedius: 142+-71+-20-7N-4C- 12.4 g

111 ♂ Peromyscus crinitus: 179-104-19-19N-15C- 14.3 g.

*CHEEK-POUCH CONTENTS SAVED.

50±ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora.

April 3, 1938, Continued.

				wt.
112	♂	Peromyscus eremicus:	194-106-20-21(N)-17(C)-	18.3g.
113	♀ NO EMB.	Peromyscus eremicus:	194-105-21-20(N)-18(C)-	19.8g.
~~114~~	~~♀~~	~~Peromyscus eremicus:~~		
115	♂	Dipodomys ~~deseri~~ merriami:	253-149-35-13(N)-10(C)-	41.5g.
116	♀ NO EMB.	Neotoma lepida:	298-141-28-32(N)-27(C)-	94.0g.

April 4, 1938

117	♂	Peromyscus crinitus:	186-104-19-20(N)-17(C)-	13.8g.
118	♀ NO EMB.	Peromyscus eremicus:	195-105-20-20(N)-17(C)-	17.5g.
119	♀ NO EMB.	Peromyscus eremicus:	202-112-21-19(N)-16(C)-	23.2g.
120	♂	Dipodomys merriami:	247-148-38-15(N)-11(C)-	40.7g
121	♀ NO EMB.	Neotoma albigula:	342-151-33-31(N)-27(C)-	173.8g

April 5, 1938

122	♂	Dipodomys merriami:	251-150-40-15(N)-11(C)-	46.0g.
123	♂	Neotoma lepida:	303-150-31-31(N)-28(C)-	98.0g.
124	♀ NO EMB.	Neotoma lepida:	294-141-31-32(N)-26(C)-	89.4g.
125	♀ NO EMB.	Neotoma albigula:	343-156-34-30(N)-28(C)-	183.6g.
126		Uta		
127		Callisaurus		
128		Sauromalus		176.0g.

April 6, 1938

129	♀ NO EMB.	*Perognathus longimembris:	122-67-18-6(N)-4(C)-	5.7g.
130		Callisaurus		

100±ft., Cerro Prieto, 6 mi. nw Punta Peñasca, Sonora

April 7, 1938

131	♀ NO EMB.	Peromyscus eremicus:	194-106-20-20(N)-17(C)-	17.8g.
132	♀ NO EMB.	Peromyscus eremicus:	195-105-20-20(N)-16(C)-	18.2g.

*CHEEK-POUCH CONTENTS SAVED.

100± ft., Cerro Prieto, 6 mi. nw Punta Peñasca, Sonora.

April 7, 1938, continued.

				wt.
133	♂	Peromyscus eremicus:	185-97-20-19^{N}-17^{C}-	18.7g.
134	♂	Neotoma lepida:	292-139-30-30^{N}-25^{C}-	113.4
135	♂	Neotoma lepida:	285+-125+-29-31^{N}-25^{C}-	109.2g.
136	♀ no emb.	Neotoma lepida:	272-126-29-28^{N}-24^{C}-	99.7g
137		Sauromalus		116.0g

1 mi. ne Sonoita, Sonora (1400± ft)

April 9, 1938

m. Delgadillo.	138	♂	Citellus tereticaudus:	266-88-36-7^{N}-2^{C}-	758.9g
	139		Uta		

April 10, 1938

140	♂	*Perognathus intermedius:	172-96-21-6^{N}-4^{C}-	11.2g.
141	♀ no emb.	Perognathus intermedius:	68+-51-21-7^{N}-4^{C}-	8.5g.
142	♂	Peromyscus eremicus:	174-95-20-18^{N}-16^{C}-	15.5g
143	♀ 2 emb.	Peromyscus eremicus:	198-106-20-18^{N}-15^{C}-	23.3g
144	♀ no emb.	Peromyscus eremicus:	189-102-19-19^{N}-17^{C}-	20.7

April 12, 1938

1775± ft., 8 mi. s. San Luis, 34 mi. nw. Caborca, Sonora.

	145	♂	Perognathus intermedius:	167-89-21-7^{N}-5^{C}-	13.9g
	146	♂	Perognathus intermedius:	173-97-22-7^{N}-5^{C}-	12.8g
	147	♂	Perognathus intermedius:	163-85-20-7^{N}-4^{C}-	12.3g
*	148	♂	Perognathus intermedius:	163+101-22-7^{N}-4^{C}-	10.9g
	149	♀ no emb.	Perognathus intermedius:	177+101-23-7^{N}-4^{C}-	12.4g.
	150	♀ no emb.	Perognathus intermedius:	177+101-23-7^{N}-4^{C}-	10.3g
	151	♀	Perognathus intermedius:	156-88-21-6^{N}-4^{C}-	9.5g
	152	♂	Peromyscus eremicus:	191-104-20-18^{N}-16^{C}-	17.2g
	153	♂	Peromyscus eremicus:	178-102-20-18^{N}-15^{C}-	13.5g

* CHEEK-POUCH CONTENTS SAVED.

1775±ft., 18 mi. s. San Luis, 34 mi. nw. Caborca, Sonora.

April 12, 1938, continued.

				wt.
154	♀ no emb.	Peromyscus eremicus:	185-102-19-$\overset{N}{18}$-$\overset{C}{15}$-	14.4g.
155	♂	Neotoma albigula:	335-153-39-$\overset{N}{27}$-$\overset{C}{23}$-	170.3g
156	♀ no emb.	Peromyscus eremicus:	176-95-19-$\overset{N}{18}$-$\overset{C}{15}$-	15.2g

April 13, 1938.

157	♀ NO EMB.	Perognathus intermedius:	178-~~120~~ 102-22-$\overset{N}{7}$-$\overset{C}{4}$-	11.5g.
158	♂	*Perognathus baileyi:	160+-67+-27-$\overset{N}{9}$-$\overset{C}{4}$-	19.4g.

1000±ft., 10 mi. nw Caborca, Sonora.

April 14, 1938.

159	♀ NO EMB.	Neotoma albigula:	319-151-32-$\overset{N}{28}$-$\overset{C}{24}$-	137.8g.
160	♀ NO EMB.	Neotoma albigula:	317-145-32-$\overset{N}{27}$-$\overset{C}{25}$-	126.9g.
161	♂	Perognathus intermedius:	161± 84±-21-$\overset{N}{8}$-$\overset{C}{5}$-	14.2g.
162	♂	Perognathus intermedius:	179-99-21-$\overset{N}{7}$-$\overset{C}{4}$-	13.8g.
163	♀ NO EMB.	*Perognathus intermedius:	176-100-21-$\overset{N}{7}$-$\overset{C}{4}$-	11.4g.
164	♀ NO EMB.	*Perognathus intermedius:	163-90-21-$\overset{N}{7}$-$\overset{C}{4}$-	10.4g.

925±ft., 1 mi. e. Caborca, Sonora.

April 15, 1938

165	♂	*Perognathus ~~inte~~ pencillatus:	190-100-23-$\overset{N}{9}$-$\overset{C}{6}$-	25.0g.
166	♂	*Perognathus pencillatus:	189-107-24-$\overset{N}{9}$-$\overset{C}{5}$-	18.6g.
167	♂	*Perognathus pencillatus:	176-95-22-$\overset{N}{8}$-$\overset{C}{5}$-	15.7g.
m. Dalqadillo 168	♀ no emb.	Citellus tereticaudus:	252-69-38-$\overset{N}{6}$-$\overset{C}{3}$-	134.4g
169		Uta		3.0g
170		Uta		2.8g

1100±ft., Cerro Cañedo, 2 mi. e. Caborca, Sonora.

April 16, 1938

171	♂	Perognathus intermedius:	187-101-21-$\overset{N}{8}$-$\overset{C}{5}$-	14.7g.
172	♂	Perognathus intermedius:	180-101-21-$\overset{N}{7}$-$\overset{C}{5}$-	13.3g.

*CHEEK-POUCH CONTENTS SAVED.

1100± ft., Cerro Cañedo, 2 mi. e. Caborca, Sonora.

April 16, 1938, continued.

173	♂	Perognathus intermedius:	174-96-21-7N-5C-	12.1g
174	♀ no emb	Perognathus intermedius:	160-86-20-6N-4C-	9.3g
175	♂	Peromyscus eremicus:	179-100-18-18N-15C-	13.7g
176	♂	Peromyscus eremicus:	186-102-18-19N-16C-	13.3g.
177	♂	Peromyscus eremicus:	180-102-18-18N-15C-	11.7g.
178	♂	Peromyscus eremicus:	185-106-18-18N-15C-	11.5g.
179	♀ no emb.	Peromyscus eremicus:	181-102-19-18N-15C-	12.0g.
180	♀ no emb	Peromyscus eremicus:	171-95-19-18N-16C-	11.3g.
181	♂	Neotoma albigula:	344-150-36-31N-28C-	174.2g
182	♀ no emb.	Neotoma albigula:	337-158-33-29N-24C-	135.3g.
183	♀ no emb.	Citellus grammurus:	450-194-49-30N-22C-	597.3g.
184		~~Uta~~ Callisaurus		
185		Uta		

900± ft., 1.6 mi. sw Las Nesnas, 20 mi. wsw Caborca, Sonora.

April 18, 1938

186	♂	Perognathus penicillatus:	171-96-28-8N-5C-	13.5g.
187	♀ no emb.	Onychomys ~~leucogaster~~ torridus:	136-49-20-16N-13C-	17.7g.
188	♂	Dipodomys merriami:	248-143-38-14N-10C-	40.0g.
189	♂	Dipodomys merriami:	236-134-35-14N-10C-	38.7g.
* 190	♂	Dipodomys merriami:	257-151-32-15N-11C-	41.5g.
191	♂	Dipodomys merriami:	255-152-37-14N-10C-	38.0g
192	♂	Dipodomys merriami:	234-131-38-13N-10C-	37.8g.
193		Callisaurus		13.3g.

April 19, 1938

194	♂	Perognathus longimembris:	~~179~~ 133-71-20-6N-4-	8.0g.
195	♂	* Perognathus penicillatus:	179-94-23-8N-5C-	19.0g.

* CHEEK-POUCH CONTENTS SAVED.

900±ft., 1.6 mi. sw Las Alesnas, 20 mi. wsw Caborca, Sonora.

April 19, 1938, continued.

				wt.
196	♂	Perognathus penicillatus:	177-98-24-$\overset{n}{8}$-$\overset{c}{6}$-	14.6 g.
197	♂	Perognathus penicillatus:	172-98-22-$\overset{n}{8}$-$\overset{c}{6}$-	14.2 g.
198	♂	Perognathus penicillatus:	175-99-24-$\overset{n}{8}$-$\overset{c}{5}$-	12.6 g.
* 199	♂	Perognathus penicillatus:	157+76+·23-$\overset{n}{8}$-$\overset{c}{5}$-	11.7 g.
200	♀ no emb.	Perognathus penicillatus:	170-89-23-$\overset{n}{7}$-$\overset{c}{5}$-	16.6 g.
201	♀ no emb.	Perognathus penicillatus:	181-95-24-$\overset{n}{8}$-$\overset{c}{5}$-	15.3 g
202		Uta		20 g.

950±ft., 5 mi. sw. Las Alesnas, 23 mi. wsw. Caborca, Sonora.

April 20, 1938.

203	♂	Neotoma albigula:	346-154-34-$\overset{n}{31}$-$\overset{c}{29}$-	183.0 g.
204	♂	Neotoma albigula:	342+59-34-$\overset{n}{33}$-$\overset{c}{37}$-	166.0 g.
205	♀ no emb.	Neotoma albigula:	335+62-33-$\overset{n}{30}$-$\overset{c}{26}$-	130.0 g.
206	♂	Peromyscus eremicus:	181-99-18-$\overset{n}{18}$-$\overset{c}{16}$-	14.4 g.
207	♂	Perognathus intermedius:	172-98-21-$\overset{n}{8}$-$\overset{c}{4}$-	12.4 g.
208	♂	Perognathus intermedius:	170-97-22-$\overset{n}{7}$-$\overset{c}{5}$-	10.1 g.
209	♂	Perognathus intermedius:	142+-70+-20-$\overset{n}{7}$-$\overset{c}{4}$-	9.1 g
210	♂	Perognathus intermedius:	161+-88+-21-$\overset{n}{7}$-$\overset{c}{4}$-	8.8 g.
211	♀ no emb.	Perognathus intermedius:	169-99-22-$\overset{n}{7}$-$\overset{c}{4}$-	10.0 g.
212	♀ no emb.	Perognathus intermedius:	162-94-21-$\overset{n}{7}$-$\overset{c}{4}$-	8.4 g
213	♀ no emb.	Perognathus intermedius:	160-90-21-$\overset{n}{7}$-$\overset{c}{4}$-	8.0 g.
214		Callisaurus		

20±ft., Puerto Lobos, Sonora

April 21, 1938

215	♀ no emb.	Perognathus longimembris:	62+-57+-18-$\overset{n}{6}$-$\overset{c}{4}$-	5.7 g.
216	♂	Onychomys torridus:	135-43-21-$\overset{n}{17}$-$\overset{c}{14}$-	25.9 g.
217	♂	Onychomys torridus:	137-42-20-$\overset{n}{19}$-$\overset{c}{16}$-	24.2 g.

* CHEEK-POUCH CONTENTS SAVED.

20± ft., Puerto Lobos, Sonora.

April 21, 1938, continued.

				wt.
218	♀ 3 emb.	Onychomys torridus:	146-51-21-18-16-	30.5g
219	♀ 4 emb.	Onychomys torridus:	148-50-20-17-14-	26.1g
m. Delgadillo 220		Callisaurus		

200± ft., 3 mi. n. Puerto de Lobos, Sonora.

April 22, 1938.

221	♂	*Perognathus intermedius:	151+-89+-22-5+-2+-	12.3g.
222	♀ no emb.	*Perognathus intermedius	179-101-22-7-5-	11.4g.
223	♂	Peromyscus eremicus:	194-101-19-20-17-	18.4g.
224	♀ NO EMB.	Peromyscus eremicus:	195-103-19-20-18-	17.9g
225	♂	Dipodomys merriami:	243-142-39-13-10-	42.4g
226	♂	Dipodomys merriami:	249-144-39-14-10-	41.1g
227	♀ NO EMB.	Dipodomys merriami:	245-146-37-15-11-	44.8g
228	♀ NO EMB.	Dipodomys merriami:	235-139-36-15-11-	30.8g
229	♂	Neotoma albigula:	292-131-35-27-22-	100.9g
230	♂	Perognathus longimembris:	127-70-17-6-4-	8.0g
231	♀ no emb.	Perognathus longimembris:	132-72-18-6-4-	6.3g

900± ft., 13 mi. sw. Caborca, Sonora.

April 23, 1938.

232	♂	Onychomys torridus:	147-14-22-16-14-	25.3g
233	♀ no emb.	Onychomys torridus:	155-55-21-18-16-	23.2g
234	♂	Dipodomys merriami:	251-146-36-14-11-	44.4g
235	♂	Dipodomys merriami:	255-147-37-14-11-	43.2g
* 236	♂	Dipodomys merriami:	257-151-37-14-10-	40.4g
237	♂	Dipodomys merriami:	242-145-35-13-9-	40.0g
238	♂	Dipodomys merriami:	236-135-35-13-10-	39.5g

* CHEEK-POUCH CONTENTS SAVED.

1900± ft., 16.7 mi. sw Bamori, Sonora.

April 25, 1938.

				wt.
239	♂	Perognathus ampulus:	148-77-20-$\overset{n}{7}$-$\overset{c}{4}$-	10.0 g.
240	♂	Perognathus baileyi:	219-120-28-$\overset{n}{10}$-$\overset{c}{6}$-	31.9 g.
241	♂	Onychomys torridus:	136-44-20-$\overset{n}{17}$-$\overset{c}{14}$-	21.4 g.
242	♂	Dipodomys spectabilis:	326-190-48-$\overset{n}{17}$-$\overset{c}{13}$-	94.8 g.
243	♂	Dipodomys spectabilis:	328-182-46-$\overset{n}{17}$-$\overset{c}{13}$-	94.9 g.
244	♂	Dipodomys spectabilis:	312-174-45-$\overset{n}{15}$-$\overset{c}{12}$-	81.9 g.
245	♀	Dipodomys spectabilis:	327-182-49-$\overset{n}{17}$-$\overset{c}{14}$-	99.1 g.

300± ft., 3 mi. nnw Puerto Libertad, Sonora.

April 26, 1938.

246	♂ jv.	Peromyscus eremicus:	151-81-18-$\overset{n}{18}$-$\overset{c}{16}$-	10.0 g.
247	♀ no emb	Peromyscus eremicus:	170-94-18-$\overset{n}{18}$-$\overset{c}{16}$-	14.9 g.
248	♀ 2 emb	Peromyscus eremicus:	178-97-19-$\overset{n}{18}$-$\overset{c}{16}$-	14.7 g.

100± ft., 1 mi. n. Puerto Libertad, Sonora.

April 27, 1938.

249	♂	Perognathus intermadius lithophilus:	152-84-19-$\overset{n}{7}$-$\overset{c}{4}$-	8.8 g.
250	♂	Peromyscus eremicus:	187-105-19-$\overset{n}{18}$-$\overset{c}{15}$-	17.0 g.
251	♀ no emb.	Peromyscus eremicus:	190-106-19-$\overset{n}{17}$-$\overset{c}{15}$-	18.0 g.

20± ft., Punta Cirio, 5 mi. s. Puerto Libertad, Sonora.

April 28, 1938.

252	♀ no emb	Perognathus longimembris:	132-71-18-$\overset{n}{6}$-$\overset{c}{4}$-	8.3 g.
253	♀ no emb	Perognathus longimembris:	130-69-18-$\overset{n}{6}$-$\overset{c}{4}$-	7.2 g.
254	♀ no emb	Perognathus longimembris:	142-80-18-$\overset{n}{6}$-$\overset{c}{5}$-	7.2 g.
255	♂	Onychomys torridus:	147-52-20-$\overset{n}{17}$-$\overset{c}{14}$-	24.1 g.
256	♂	Dipodomys merriami:	252-143-37-$\overset{n}{13}$-$\overset{c}{10}$-	48.9 g.
257	♂	Dipodomys merriami:	260-150-39-$\overset{n}{13}$-$\overset{c}{10}$-	47.0 g
258	♂	Dipodomys merriami:	242-139-36-$\overset{n}{14}$-$\overset{c}{11}$	42.1 g

20±ft., Punta Cirio, 5 mi. s. Puerto Libertad, Sonora.

April 28, 1938, continued.

			wt.
259 ♂	Dipodomys merriami:	251-145-37-$\overset{N}{14}$-$\overset{C}{11}$	40.8g.

650±ft., 11.3 mi. w. Hermosillo, Sonora.

May 1, 1938.

260 ♂	Reithrodontomys (sp?):	128-56-17-$\overset{N}{14}$-$\overset{C}{11}$	11.1g.
261 ♀ noemb.	Reithrodontomys sp.	125-58-16-$\overset{N}{14}$-$\overset{C}{13}$	11.2g.
262 ♀ noemb.	Reithrodontomys sp.	129-59-16-$\overset{N}{14}$-$\overset{C}{12}$	10.4g.
263 ♂	Perognathus penicillatus:	191-102-23-$\overset{N}{9}$-$\overset{C}{6}$	19.3g.
264 ♂	Perognathus penicillatus:	171-98-22-$\overset{N}{7}$-$\overset{C}{5}$	15.6g.
265 ♂	Perognathus penicillatus:	166-90-21-$\overset{N}{7}$-$\overset{C}{6}$	15.2g.
266 ♂	Perognathus penicillatus:	165-87-19-$\overset{N}{8}$-$\overset{C}{5}$	12.9g.
267 ♂	Onychomys torridus:	137-46-21-$\overset{N}{18}$-$\overset{C}{16}$	23.9g.
268 ♀ 3 emb.	Onychomys torridus:	136-44-19-$\overset{N}{18}$-$\overset{C}{14}$	27.3g.

2~~8~~70±ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938

269 ♂	Perognathus flavus:	99-42-15-6-5	8.7g.
270 ♂	Reithrodontomys sp:	129-53-16-16-13	12.4g.
271 ♂	Reithrodontomys sp:	129-57-17-15-13	11.8g.
272 ♂	Reithrodontomys sp:	132-61-16-15-12	10.7g.
273 ♂	Reithrodontomys sp:	128-58-16-15-12	10.2g.
274 ♂	Reithrodontomys sp:	127-57-16-14-13	10.0g.
275 ♀ one emb.	Reithrodontomys sp:	122-52-16-14-12	8.7g.
276 ♀ no emb.	Reithrodontomys sp:	126-55-16-16-13	12.7g.
277 ♀ 3 emb.	Perognathus baileyi:	200-102-26-10-7	29.7g.
278 ♀ no emb.	Perognathus baileyi:	204-105-26-9-7	29.7g.
279 ♂	Peromyscus eremicus:	190-97-21-20-17	20.3g.
280 ♀ 2 emb.	Peromyscus eremicus:	196-100-21-21-18	25.6g.

2~~8~~7 0± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938, continued.

				wt.
281	♂	Eumops perotis:	161-44-16-30N-26C-	51.5g.
282	♀ no emb.	Eptesicus fuscus:	111-42-9-17N-12C-	12.1g.
283	♂	Tadarida mexicana:	96-31-9-16N-14C-	11.2g.
284	♂	Tadarida mexicana:	97-33-9-18N-15C-	11.0g.
285	♂	Tadarida mexicana:	91-29-8-18N-14C-	10.2g.
286	♂	Perognathus flavus:	107-46-17-6N-4C-	8.4g.
287	♂ jv.	Perognathus flavus:	98-44-15-5N-4C-	5.2g.
288	♀ no emb.	Perognathus flavus:	110-47-17-6N-4-	8.6g.
289	♀ no emb.	Perognathus flavus:	93+·34+·17-7M-4C-	8.0g
290	♀ no emb.	Perognathus flavus:	92+·35+·16-6N-4C-	6.5g.

taken night of May 1, 1938

~~29~~ May 3, 1938.

291	♂	Perognathus flavus:	114-51-16-7N-4C-	10.4g.
292	♂	Perognathus flavus:	104-46-15-6N-4C-	8.7g.
293	♂	Perognathus flavus:	103-49-16-6N-4C-	8.4g.
294	♂	Perognathus flavus:	94-40-15-5N-3C-	4.9g.
~~295~~ 296	♀ 6 emb.	Perognathus flavus:	103-46-16-7N-4C-	9.2g.
297	♀ no emb.	Perognathus flavus:	102-47-16-6N-4C-	6.4g.
298	♂	Perognathus baileyi:	224-116-27-11N-6C-	38.8g.
299	♀ no emb.	Perognathus baileyi:	209-109-26-11N-6C-	32.7g

May 2, 1938, continued.

300	♂	Eptesicus fuscus:	115-45-10-16N-14C-	14.0g.
301	♂	Eptesicus fuscus:	111-41-8-16N-13C-	12.5g.
302	♂	Eptesicus fuscus:	109-46-9-17N-13C-	11.6g.
303	♂	Eptesicus fuscus:	109-43-9-16N-13C-	11.2g.
304	♀ no emb.	Eptesicus fuscus:	106-39-10-17N-14C-	13.0g.
305	♀ no emb.	Eptesicus fuscus:	107-37-9-15N-13C-	11.7g.

270±ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938, continued (May 3, 1938, page 13) wt.

306	♂	Eptesicus fuscus	: 102 - 38 - 8 - 17N - 14C -		-14.0g.
307	♂	Eptesicus fuscus	: 116 - 44 - 9 - 17N - 15C -		-12.0g
308	♀ no emb.	Eptesicus fuscus	: 110 - 40 - 9 - 16N - 13C -		-9.2g
309	♂	Eumops perotis:	164 - 50 - 14 - 30N - 20C -		-51.8g
310	♂	Eumops perotis:	167 - 50 - 13 - 28N - 19C -		-44.3g.
311	♀ no emb.	Eumops perotis:	170 - 52 - 13 - 27N - 18C -		-49.9g.

SKELETON ONLY

50±ft., 3 mi. se Punta Arena, 75 mi. w. Hermosillo, Sonora.

May 7, 1938.

312		Cnemidophorus		
313		Cnemidophorus		
314		Uta		
315		Callisaurus		
316		Callisaurus		

May 8, 1938.

317	♂	Perognathus penicillatus:	177 - 95 - 23 - 9N - 6C -	-17.0g.
318	♂	Perognathus penicillatus:	179 - 99 - 23 - 9N - 6C -	-15.0g.
319	♂	Perognathus penicillatus	173 - 94 - 23 - 9N - 5C -	-14.4g.
320	♀ no emb.	Perognathus penicillatus	165 - 91 - 22 - 7N - 4C -	-12.5g.
321	♂	Perognathus baileyi:	195+ - 99+ - 27 - 10N - 6C -	-29.4g
322	♂	Perognathus baileyi:	200 - 111 - 25 - 10N - 7C -	-22.7g.
323	♀ no emb.	Perognathus baileyi ~~Dipodomys merriami~~ :	204 - 111 - 27 - 9N - 6C -	-26.3g
324	♂	Dipodomys merriami :	245 - 141 - 36 - 13N - 10C -	-35.5g.
325	♀ no emb.	Dipodomys merriami :	244 - 142 - 36 - 13N - 10C -	-35.1g
326	♂	Lophortyx gambeli:		-148.5g.

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500±ft., 2 mi. e. Punta Arenas, 75 mi. w. Hermosillo, Sonora.

May 9, 1938.

			weight:
327	SKULL ONLY	Perognathus intermedius:	
328	♂	Perognathus intermedius: 166-93-20-7N-5C-	11.7g.
329	♂	Perognathus intermedius: 153-82-19-8N-5C-	10.2g.
330	♂	Perognathus intermedius: 151-80-19-7N-4C-	9.7g.
331	♀ 3 EMB.	Perognathus intermedius: 161-92-20-7N-5C-	10.7g
332	♂	Peromyscus eremicus: 177-100-20-19N-16C-	14.4g
333	(250±ft)	Coluber	72.9g

650±ft., Sierra Seri, 9 mi. w. Rancho San Javier, 70 mi. w Hermosillo, Sonora.

May 10, 1938.

334	♂	Perognathus intermedius: 161-84-20-7N-4C-	14.0g
335	♂	Perognathus intermedius: 165-93-20-7N-4C-	12.7g
336	♀ no emb	Perognathus intermedius: 164-92-19-7N-4C-	11.5g
337	♀ no emb.	Perognathus intermedius: 163-90-20-7N-5C-	10.8g
338	♀ no emb.	Perognathus intermedius: 156-87-19-7N-5C-	10.0g
339	♂	Perognathus penicillatus: 174-97-24-8N-5C-	14.6g
340	♀ no emb.	Perognathus baileyi: 219-123-27-10-6-	28.0g
341	♂	Peromyscus eremicus: 136+-55+-19-19N-17C-	17.0g
342	♂	Peromyscus eremicus: 185-100-20-20N-18C-	15.8g
343		Cnemidophurus:	-18.5g
[344	♀ no emb.	(4 mi. w. Rancho San Javier, 65 mi. w. Hermosillo) Citellus tereticaudus: 245-89-39-6N-2C-	-115.3g]

May 11, 1938

345	♂	Perognathus intermedius: 161-86-21-8N-5C-	12.2g
346	♂	: 164-89-20-7N-4C-	12.6g
347	♀ 4 emb	: 159-88-21-7N-4C-	13.3g
348	♀ 5 emb.	: 158-87-19-7N-4C-	11.8g
349	♀ no emb.	: 164-93-19-7N-4C-	9.9g.

650± ft., Sierra Seri, 9 mi. w. Rancho San Javier, 70 mi. w. Hermosillo, Sonora

May 11, 1938, continued.

				wt.
350	♀ no emb.	Perognathus intermedius:	146-79-18-N 7-C 4-	9.5 g.
351	♂	Perognathus baileyi:	144+-55+-26-N 10-C 7-	27.2 g.
352	♂	Perognathus baileyi:	204-110-27-N 10-C 6-	23.5 g.
353	♀ no emb.	Perognathus baileyi:	195-109-25-N 10-C 6-	20.8 g.
354	♂	Neotoma albigula:	357-157-35-N 33-C 31	-226.5 g.
355	♂	Neotoma albigula:	333+149+32-N 32-C 30	-190.2 g
356	♂	Neotoma albigula:	349-166-37-N 31-C 27	-173.8 g.

300± ft., 7 mi. ese. Rancho Libertad, 47 mi. w. Hermosillo, Sonora

May 12, 1938.

357	♀ no emb.	Perognathus penicillatus:	112+-35+-23-N 8-C 6-	-15.2 g
358	♂	Dipodomys deserti:	365-222-53-N 19-C 15-	-114.5 g.
359	♀ no emb.	Dipodomys deserti:	344-212-53-N 17-C 14-	-101.7 g.

2600± ft., 20 mi. s. Santa Ana, Sonora.

May 14, 1938.

360	♂	Dipodomys spectabilis:	328-186-48-N 17-C 12-	-111.9 g.
361	♂	Dipodomys spectabilis:	331-187-51-N 17-C 12-	-105.7 g.
362	♂ jv.	Dipodomys spectabilis:	279-156-48-N 15-C 11	-69.6 g.
363	♀ one emb.	Dipodomys spectabilis:	332-187-50-N 16-C 13	-121.7 g.
364	♀ no emb.	Dipodomys spectabilis:	329-185-48-N 16-C 13	-110.8 g.
365	♀ no emb.	Dipodomys spectabilis:	320-180-50-N 16-C 12	-110.7 g.
366	♀ no emb.	Dipodomys spectabilis:	322-182-50-N 16-C 11-	-109.7 g.
367	♀ no emb.	Dipodomys spectabilis:	324-185-47-N 16-C 11-	-106.5 g.
368	♀ no emb.	Dipodomys spectabilis.:	309-177-47-N 15-C 10-	-95.0 g
369	♂	Dipodomys merriami:	249-136-38-N 14-C 11-	-46.6 g
370	♂	Perognathus penicillatus:	178-95-22-N 9-C 5-	-17.9 g
371	♂	Perognathus penicillatus:	182-96-22-N 9-C 6-	-16.3 g

2100± ft., 45 mi. n. Hermosillo, Sonora

May 15, 1938.

			wt.
372 ♂	Perognathus penicillatus:	172-93-22-$\overset{N}{9}$-$\overset{C}{5}$-	19.3g.
373 ♂	Perognathus penicillatus:	182-98-22-$\overset{N}{8}$-$\overset{C}{5}$-	19.0g.
374 ♂	Perognathus penicillatus:	180-98-23-$\overset{N}{10}$-$\overset{C}{6}$-	18.5g.
375 ♂	Perognathus penicillatus:	178-94-21-$\overset{N}{8}$-$\overset{C}{5}$-	15.8g.
376 ♀	Perognathus penicillatus:	176-97-22-$\overset{N}{8}$-$\overset{C}{5}$-	20.2g.
377 ♀	Perognathus penicillatus:	173-95-22-$\overset{N}{8}$-$\overset{C}{5}$-	16.5g.
378 ♀	Perognathus penicillatus:	155-85-22-$\overset{N}{7}$-$\overset{C}{5}$-	12.3g
379 ♀	Perognathus penicillatus:	174-91-21-$\overset{N}{8}$-$\overset{C}{5}$-	16.9g.
380 ♀	Onychomys torridus:	149-52-21-$\overset{N}{18}$-$\overset{C}{16}$-	25.0g
381 ♂	Dipodomys spectabilis:	336-200-50-$\overset{N}{17}$-$\overset{C}{11}$-	104.3g
382 ♀	Dipodomys spectabilis:	318-185-48-$\overset{N}{15}$-$\overset{C}{11}$-	102.2g
383 ♂	Dipodomys merriami:	250-149-38-$\overset{N}{13}$-$\overset{C}{10}$-	45.0g
384 ♂	Dipodomys merriami:	248-146-38-$\overset{N}{13}$-$\overset{C}{10}$-	42.0g
May 14, '38 385 ♂	Pipilofuscus mesoleucus (Mt. Towhee):		43.0g

925± ft., 1 mi. sw. Hermosillo, Sonora.

May 15, 1938.

386 ♂	Tadarida mexicana:	97-35-8-$\overset{N}{19}$-$\overset{C}{15}$-	9.3g

May 16, 1938.

387 ♂	Thomomys bottae:	232-70-33-$\overset{N}{5}$-$\overset{C}{3}$-	137.6g.

May 17, 1938.

388	Rana		~~26.6g~~
389	Rana		

2150± ft., La Estancia, 6 mi. n. Nacori, Sonora.

May 19, 1938.

390 ♀ no emb.	Liomys pictus:	234-115-21-$\overset{N}{16}$-$\overset{C}{10}$-	42.0g.
~~391~~			

2250±ft., Sierra de Mazatan (E. slope), 6 mi. N. Nacori, Sonora.

May 19, 1938, continued.

									wt.
391	♂	~~Flammulated~~ Saguaro Screech Owl							98.9g
392	♀ 2 emb.	Sylvilagus	391	45	84	N 69	C 81		1030.0g.

(2400±ft) May 20, 1938.

393	♂	Perognathus penicillatus:	159	78	21	N 8	C 5		12.6g.
394	♀ 4 emb.	Perognathus penicillatus:	~~152~~ 172	92	22	N 8	C 5		17.7g.
395	♀ 3 emb.	Perognathus penicillatus:	164	87	21	N 8	C 6		15.8g.
396	♂	Peromyscus eremicus:	208	113	21	N 19	C 16		19.5g.
397	♂	Peromyscus eremicus:	186	96	20	N 20	C 17		17.0g.
398	♀ no emb.	Peromyscus eremicus:	191	102	19	N 18	C 17		22.5g.
SKULL ONLY: PICK-UP.									
399		Odocoileus couesi.							

2700±ft., Rancho Banachari, 10 mi. N. Matape, Sonora.

May 20, 1938, continued

400	♂	Antrozous pallidus:	112 ~~112~~	40	9	N 28	C 25		16.5g.
401	♂	Antrozous pallidus:	115	44	9	N 28	C 24		16.4g.
402	♀ two emb.	Antrozous pallidus:	116	45	10	N 28	C 26		18.6g.
403	♀ no emb.	Antrozous pallidus:	113	42	10	N 29	C 26		18.4g.
		May 21, 1938							
404	♂	Perognathus baileyi:	222	120	26	N 10	C 6		31.9g.
405	♀ no emb.	Perognathus baileyi:	225	125	26	N 10	C 6		27.8g.
406	♂	Peromyscus eremicus:	189	100	22	N 21	C 19		21.7g.
407	♂	Onychomys torridus:	135	42	19	N 18	C 14		21.7g

1400±ft., 1 mi. N. Batuc, Rio Moctezuma, Sonora

May 22, 1938.

408	♂	Perognathus goldmani:	205	111	25	N 11	C 8		19.8g.
409	♂	Perognathus penicillatus:	180	101	21	N 8	C 6		16.4g
410	♂	Perognathus penicillatus:	169	93	22	N 9	C 6		14.8g
411	♂	Perognathus penicillatus:	174	98	22	N 9	C 6		14.6g

1400± ft., El Ojito, 6 mi. NE. Suaqui, Sonora.

May 22, 1938, continued.

			wt.
412		Callisaurus	4.2g.

May 23, 1938.

413	♀ no emb. *	Peroqnathus goldmani:	216-122-26-N 11-C 8-	21.0g.
414	♀ two emb	Peromyscus eremicus:	188-102-20-N 19-C 16-	20.0g.
415	♀ no emb	Peromyscus eremicus:	177+-89+20-N 19-C 18-	18.9g.

(nueve) Tapachõ, Sonora

May 23, 1938, continued.

416		20 mt. stream minnows.		

2550± ft., lava bed, mi. Moctezuma, Sonora.

May 24, 1938.

417	♀ no emb *	Peroqnathus baileyi:	220-120-26-N 11-C 7-	26.5g.
418	♂	* Peroqnathus goldmani:	210-115-25-N 9-C 7-	24.1g.
419	♂ jv.	Peroqnathus goldmani:	81+-4+-23-N 10-C 6-	10.0g.
420	♀ no emb.	Peroqnathus goldmani:	207-114-25-N 12-C 8-	21.8g.
421	♀ no emb.	Peroqnathus goldmani:	197-106-22-N 12-C 8-	20.2g.
422	♂	Peromyscus eremicus:	201-109-20-N 18-C 16-	23.0g
423	♀ no emb.	Peromyscus eremicus:	209-111-21-N 20-C 18-	28.6g
424	♀ 3 emb.	Peromyscus eremicus:	185-100-20-N 18-C 14-	19.5g.
425	♀ 3 emb.	Peromyscus eremicus:	171-87-20-N 18-C 12-	19.2g.
426	♀ jv. no emb.	Neotoma albigula:	273-119-33-N 28-C 24-	88.4g
427	alcoholic. new-born young	Peroqnathus baileyi:		1.5g.
428	alcoholic new-born young	Peroqnathus baileyi:		1.5g.
429	alcoholic new-born young	Peroqnathus baileyi:		1.5g
430	♀ gave birth in live-trap to above 3 young	Peroqnathus baileyi:	220-118-27-N 11-C 7-	27.6g.

* CHEEK-POUCH CONTENTS SAVED.

2550±ft., lava bed, mi. Moctezuma, Sonora.

May 25, 1938.

								wt.
431	♀ no emb.	Peromyscus goldmani:	198+	100+	22	N 10	C 7	17.9g.
432	♂	Peromyscus baileyi:	221	121	27	N 11	C 7	30.0g
433	♂ jv.	Peromyscus baileyi:	179	102	27	N 9	C 6	14.9g
434	♂	Peromyscus penicillatus:	181	95+	22	N 9	C 6	18.4g
435	♂ no emb	Peromyscus penicillatus:	187	101	24	N 9	C 6	17.7g
436	♀ no emb.	Peromyscus penicillatus:	186	101	24	N 8	C 6	16.8g
437	♀	Peromyscus penicillatus:	176	96	23	N 9	C 5	13.0g

tan rocks near lava bed

2300±ft., 1 mi. S. Moctezuma, Sonora.

May 26, 1938.

438	♂	Peromyscus goldmani:	205	111	25	N 12	C 8	26.0g
439	♂	Peromyscus goldmani:	200	108	25	N 12	C 8	21.2g
440	♂	Peromyscus eremicus:	183	94	20	N 18	C 15	20.5g
441	♂	Peromyscus eremicus:	187	97	20	N 19	C 17	19.6g
442	♂	Peromyscus penicillatus:	201	105	23	N 9	C 6	19.7g
443 SKULL ONLY		Holbrookia						5.9g
444	♀ jv.	Thomomys umbrinus:	162	50	27	N 5	C 2	43.3g

May 27, 1938

445	♀ 2 emb.	Peromyscus penicillatus:	171	91	22	N 8	C 4	17.0g.
446 SKELETON ONLY	♂	Peromyscus penicillatus:	183	99	22	N 9	C 6	16.9g.
447	♂	Peromyscus baileyi:	223	121	28	N 11	C 7	33.1g.
448	♀ no emb.	Peromyscus baileyi:	207	117	25	N 10	C 7	22.9g
449	♂	Peromyscus eremicus:	185	96	20	N 17	C 15	18.9g.
450 SKULL ONLY	♂	Peromyscus eremicus:	196	102	20	N 18	C 16	18.8g.
451	♀ no emb.	Thomomys umbrinus:	206	69	29	N 4+	C 1+	92.1g

3400±ft., Arroyo Santa Rosa, 28 mi. N. Cumpas, Sonora.

May 28, 1938.

								wt.
452	♂	*	Peroqnathus goldmani:	125+	39+	23	N +	C +	17.0g
453	♀	3 emb *	Peroqnathus baileyi:	205	106	27	N 10	C 7	25.6g
454	♀	no emb. *	Peroqnathus baileyi:	206	119	26	N 10	C 6	26.7g
455	♂		Peromyscus eremicus:	187	99	19	N 17	C 14	18.8g.
456	♀	3 emb	Peromyscus eremicus:	193	101	20	N 17	C 15	25.9g
457	♀	3 emb.	Peromyscus eremicus	188	97	20	N 17	C 14	20.6g.
458	♀	3 emb.	Peromyscus eremicus	184	95	20	N 17	C 15	19.4g

May 29, 1938.

4700±ft., La Sauceda, 15 mi. NNE. Cananae, Sonora.

459	♀	2 emb 60mm *	Dipodomys spectabilis:	354	201	55	N 17	C 13	156.9g.
460	♀	2 emb. *	Dipodomys spectabilis:	352	192	54	N 18	C 14	159.9g.

4650±ft., 2.3 mi. S. Santa Cruz, Sonora.

May 30, 1938.

461	♂		Peromyscus leucopus:	171	74	22	N 18	C 14	23.1g.

JESimpson,
1938.

General Account

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March 13 to June 2, 1938.

SIMPSON, 1938 4000ft., Nogales, Santa Cruz Co., Arizona

March 13, 1938

Left Museum of Vertebrate Zoology at 12:30 PM Thursday, March 10, 1938 in University of California car # 170, an International panel, half-ton truck, model 1936; Dr. and Mrs. Seth B. Benson and I in the almost capacity loaded truck.

Without event to San Fernando at 11 PM that night; stayed overnight at home of Mrs. Benson's parents. Dr. Benson and I left the next morning at 8 AM for Nogales; however, generator trouble kept us in San Fernando until 10:30 AM; drove until 11 PM beyond Coachella, Calif.

That night, Friday, March 11, 1938 at 9:30 PM 4 mi. SE of White Water, Riverside Co., California on US Highway 99 a kit-fox, Vulpes macrotis, crossed the road in the headlights.

Slept in alkaline field in the rain and continued to Nogales at 7 am driving 439 miles to arrive at 10 pm MST. last night.

To-day went across border to Nogales, Mexico and found Señor Margarito Delgadillo, who will accompany Dr. Benson & I, if we can get the truck across the border. Dr. Benson interviewed Senor Mascareñas who was Chief of Customs at Nogales for 16 years. He inspected our papers and couldn't find anything out of order. Dr. Benson then attempted to see the present chief customs official but failed, it being Sunday.

4000ft., Nogales, Sonora

March 16, 1938

With the help of the American Consul*, Mr. Thos. H. Robinson and consulate-clerk Mrs. Daniels Dr. Benson and I were granted tourist cards which permit six months travel in the Republic of Mexico. A permit for the truck was granted only with the condition that an affidavid from the University establishing Dr. Benson's authority as operator be obtained (after we left by the Pacific Brokerage Company). The customs officials have been sticking to the very letter of the law to the extent of our two-day delay. Some difficulty was raised as to our taking more than fifty cartridges per gun across the border, but our permit from the General's office signed by Captain Monroy fixed that. The customs officials insisted on a broker listing our every item as if for duty but no duty was to be charged; Pacific Brokerage did the work much easier than at first outlined. Objection was raised against the cotton batting but was finally allowed to cross; at last with a three centavos duty on our dried fruit (and ten American dollars to the broker) we cleared the customs and left Nogales at noon. With an additional supply of groceries purchased in both Nogales, Arizona and Nogales, Sonora the truck was loaded to full capacity.

From Nogales to Casita to Imuris to Magdalena to La Misión where 1/10 mi. due east made first camp at 3:30 pm.

(VICE-CONSUL, MR. POWELL; CLERK, MRS. WRIGHT)

2650ft., La Misión, 2 mi. w. Magdalena, Sonora

March 16, 1938, continued.

Made camp in an earth pit from which the Mexicans take the earth to make adobe bricks. Dr. Benson camped in this pit two years ago. The afternoon was warm and clear with a light wind.

The terrain is of low, rocky hills covered with brush which is made up of ochotillo (in bloom), barrel cactus (in fruit), saguaro, many cholla, mesquite, creosote, and nopal — mainly, with others that I do not know.

In evening Dr. Benson set out 50 live traps, Margarito 75 mouse traps, and I 75 mouse traps baited: oats and apiste

March 17, 1938

Results of 75 mouse traps:

1 Perognathous intermedius: rocky arroyo at base of saguaro.

1. P. penicillatus: in brush of wash.

1. P. baileyi: top of rocky hill in low cholla.

2. Dipodomys ~~baileyi~~ merriami: brush of wash.

7. Peromyscus eremicus: in each of the above.

The traps of Dr. Benson and Margarito were empty; so Margarito took traps to set for gophers while Dr. Benson gave me instruction in the finer points of putting up specimens.

Margarito caught 4 Thomomys bottae in half-day with twenty traps (10 sets).

Set 70 mousetraps on rocky hillsides and hilltops in saguaro "forest".

2650 ft., La Misión, 2 mi. w. Magdalena, Sonora

March 17, 1938, continued.

Setting trap-line over top of rocky hill crept up to within 40 feet of six black vultures loafing on rocks at high hill-top at 4:30 PM; they flew to adjacent hill-top to alight on rocks.

Birds commonly seen in this area: Phenapeplas, ravens, black vultures, turkey vultures, cardinals, linnets, doves, red-tail hawks, small fly catchers, and other unknown to me.

Took apart three woodrat nests on hill-top among large rocks (same hill-top where above mentioned black vultures rested). Two were small (less than one cubic yard of sticks piled up) and built to side and under large rocks; burrows into rocky earth found in each. The third was much larger (mostly concealed under very large (10 ft) rocks; a storage place was excavated of about two cubic yards of various cactus debris and seeds and fruit (only about 1% fresh, green foliage). Much of this material was the spined seeds and fruit of cacti — very difficult to handle and must be somewhat so to the woodrats. The house material was mostly of mesquite sticks, but among it was commonly cholla with its dangerous spines. The three houses were in a triangle the sides of which would measure less than thirty feet. In the vicinity of the houses saguaro, cholla, mesquite, creosote, and ocotillo were the dominant plants; portions of each of these could be found in the houses and storage.

2650 ft., La Misión, 2 mi. w. Magdalena, Sonora

March 18, 1938

In the 70 mousetraps: 12 (8 ♂♂) Peromyscus eremicus, 2 ♂ Perognathus baileyi (♂41, ♂42); only the two pocketmice put up.

Broke camp after lunch; drove thru Santa Ana, La Playa, and Altar. Three miles east of Altar spent night along wash; this stop was 66 miles from first camp. Dr. Benson shot a round-tailed ground squirrel at 1500 ft., 43.5 mi. w. Magdalena, Sonora (♂43, JES)

March 19, 1938

Entered the above ground squirrel in my catalogue after taking measurements; Margarito Delgadillo put it up. here three miles west of Pipiquito where truck is being repaired by Dr. Benson for leaking gas line.

Traveled all day passing thru Caborca, Tajitos, San Pedro, Garambullo, San Luis, Costa Rica Ranch, and Quitovac to arrive at Sonoita in evening.

Had excellent dinner at the home of Senor Ignacio Quiroz, who accompanied a Lumholtz party thru this region when he was a young man. Senor Quiroz knows Dr. Benson, Mr. Dave Johnson, and Mr. Wm Richardson from former trips thru this region.

Went outside of town and slept in wash after having spent a delightful evening at a Mexican dance which is the "ball" of the eve of the Spring Fiesta which is tomorrow, Sunday.

Sonoita, Sonora

March 20, 1938

Rested this Sunday and watched the Fiesta. Made camp outside town for the night after having learned of the roads from some truck-drivers.

A customs official guided us to a secluded spot along the river (Rio Sonoita); we there had the first bath since leaving Nogales.

March 21, 1938

Left Sonoita early in the morning; passed by ~~thro~~ La Salada (last water until Papago tanks); turned off the "highway" about 45 miles out of Sonoita to arrive at early afternoon at:

775± ft., Tinajas de los Papagos, Sierra Pinacate, Sonora

Made camp and investigated the Papago tanks which are natural cisterns in the boulders of a deep wash around which the Papago Indians formerly lived. There are half a dozen or more of these "tanks" of which three hold enough greenish water to serve us as long as we need stay here.

As we were ~~told~~ in Sonoita (an Arizonan was camping here for a vacation) we found Mr. Robert Lenon, a young mining engineer from Bisby, Arizona (Arizona, '29). He is interested in the craters of the region and knows the desert of this region (Arizona, especially) well. Mr. Lenon moved his coupé to our camp and helped with some directions, an azimuth compass (Brunton's "pocket-transit"), and fresh food. He is also a good camp-fellow and lending a ready hand any time.

775± ft., Tinajas de los Papagos, Sierra del Pinacate, Sonora

March 21, 1938, continued

Set out 50 mousetraps and fifty livetraps.

March 22, 1938

Caught 2 Perognathous intermedius in black lava field (♂44, ♂45, JES) and 2 Dipodomys merriami (♂46, ♂47, JES) in the mousetraps; 1 Dipodomys merriami in the livetraps (♂48). The kangaroo rats were taken in the light sand of the washes which run thru the dark lava. The testes of each of these males were descended. Also 4 (one ♀) Peromyscus eremicus in lava.

In the afternoon shot four lizards (Uta?) in the dark lava fields.

Late afternoon set out 50 mousetraps and 50 livetraps. About 4:20 PM shot a bat (♂55, Pipistrellus hesperus) in the large wash that leads to the Papago tanks; an hour later shot 3 more bats (53♀, Myotis californicus; 54♂, 56♂ P. hesperus in the same wash nearer the tanks where they were seen to come to drink.

Large numbers (50±) of mourning doves also come to the tanks for water in the dusk; three shot for the table.

March 23, 1938

Caught one Perognathous intermedius (57♀) atop a rocky hill in the middle of large, level, small-rock, dark lava field; the other 49 traps set in this field yielded nothing {but 2 ♂ Peromyscus eremicus}

The 50 live traps set in coarse-dark-sand-and-rock level lava field yielded nothing.

Set 50 live traps and 50 mouse traps in the coarse sand (and creosote) at the base of Sykes crater, two miles

775± ft., Tinajas de los Papagos, Sierra del Pinacote, Sonora

March 23, 1938, continued

ne Papago tanks. Also set out 21 rat-traps in boulders along the edge of the wash containing the tanks.

March 24, 1938

Two Neotoma lepida bensoni (♀♂ 58, 59: no emb) along large rocks of walls of wash ~~of~~ the Papago tanks. Along same trapline with mouse-traps Dr. Benson caught ~~[illegible]~~ seven Perognathus intermedius and two P. baileyi.

1000± ft., 2 mi. ne Tinajas de los Papagos, Sierra del Pinacate, Sonora

March 24, 1938, continued.

Nine Perognathus intermedius (60–68, JES; one ♀ no emb) cheek pouch contents saved. in the coarse sand (cinders) and creosote at base of Syke's crater. Nothing in the 50 live traps set at same place. These pocket-mice taken among creosote (fields of it with only an occasional ocotillo). Dr. Benson helped me with mice.

Climbed to the rim of Syke's crater from which the desert could be seen for miles to the sand dunes of the Gulf of California. The Gulf itself was from here only barely perceptibly, but the mountains of Lower California were plainly visible. The surrounding desert lava fields are level with the rocky hills and mountains arising abruptly from the desert floor (as cinder cones or erosional remnants [or both?]); no such thing as "foothills" here. From this elevation (1000± ft. + 300± ft. to rim) the vegetation appears very sparse because of its ~~[illegible]~~ foliage-less character except the large wash which runs thru Papago tanks where

1000± ft., 2 mi. n.e. Tinajas de los Papagos, Sierra del Pinacate, Sonora

March 24, 1938, continued

the palos verdes, mesquite, and iron-wood of the wash contrasts with the adjacent lava fields. Here two miles to the northeast the creosote entirely dominates the cinder fields; near Papago tanks, however, creosote tho heavy is associated with some saguero, much ocotillo, cholla, palo verde, mesquite, etc.

After putting up our specimens (Dr. Benson helped me) we broke camp, and drove (accompanied by Mr. Lenon and his Plymouth coupe) six and a half miles to:

850± ft., Paso McDougal, Pinacate Region, Sonora

Here we made camp at base of Sierra Hornaday. Set out 50 mousetraps along the east face of " " ; 37 mousetraps in sand-grass at base of " " ; 50 live traps after dark within few hundred yards " " .

March 25, 1938

Along the east face of Sierra Hornaday caught 9 Peromyscus eremicus (5♂ + 4♀ no emb.; put up two: 69♀, 70♂), 2 Peromyscus crinitus (71♂ and 75♀ no emb.), and one ♂ Perognathus intermedius (but its skull was badly broken; also the tail of one was in a trap). In the sand and grass caught 15 Dipodomys merriami (10♂ + 5♀ no emb.; see 73♂ and 74♂) and one Perognathus penicillatus (72♂). Cheek-pouch contents of latter and the kangaroo rats saved.

Sierra Hornaday, unlike the majority of the peaks and ranges of the near vicinity, is not lava at all; it is composed of (granite-like but without quartz) mazonite and granite mostly

850±ft., Paso McDougal, Pinacate Region, Sonora

March 25, 1938, continued

with a scattering of quartz but no lava. Sparse vegetation of creosote, cholla, palo verde, some soft succulents, and other cacti grows on the east face of Sierra Hornaday. On the desert floor of the tan sand in the near vicinity grows much creosote, cholla, ironwood, a bunch-grass (quite densely), and some saguero and ochotillo.

Mr. Lenon told us the trick of telling time by the North Star and Big Dipper with an arithmatic formula; the method seems to work fairly well: using an imaginary line from the North Star thru the two "lip-stars" of the Big Dipper as the "hour-hand" (with a vertical line from horizon thru North Star as a line thru no. 12 and no 6 of a clock-face) ascertain the hour figure to the quarter-hour; add to that figure, one; double the sum; add the number of month from the first of the year to the quarter month (eg, to-day, March 25th would be 2¾); subtract this from 16¼ (if the number be larger than 16¼; subtract from 40¼ [NB: 16¼+24=40¼]) This method sounded comical and cumbersome, but it has held up under investigation so far.

After putting up our specimens we broke camp to start for Crater Elegante with Mr. Lenon to go ahead by fifteen minutes or so to show the way. He got only a few yards from camp and pushed

850± ft., Paso McDougal, Pinacate Region, Sonora

March 25, 1938, continued

his coupe into a ditch; subsequently in rescue work the truck was stuck in the sand. Much time was lost before both car and truck were clear. Mr. Lenon's car had to be dug out from the front, cutting away the ditch-bank and also jacked up for sticks to be placed for traction; the latter method as employed by Dr. Benson on both vehicles illustrated to the engineer and the a good method of clearing heavy cars dug into soft ground. Mr. Lenon again took the road while we packed the truck before following him.

No sign being beforehand agreed upon we missed the turn-off but finally found what we thought was Mr. Lenon's trail. We followed him close; too closely for he turned off the road and went trail-blazing or sight-seeing or both. The worse of his trail was over a muchly-pitted grass field over which we bounced for two or three miles before coming to the road and at a crater found Mr. Lenon with a flat-tire; however, the crater was not Crater Elegante but a smaller one ten miles short of " " :

800± ft., Cerro Colorado, 28 mi. w. Sonorita, Sonora

March 25, 1938, continued

We made camp in a creosote-covered cinder field; set out 50 mousetraps in the dark.

800± ft., Cerro Colorado, 28 mi. w. Sonoita, Sonora

March 26, 1938

In the 50 mouse-traps set among the creosote on the dark cinders (which cover in a thin layer the tan desert soil) caught 7 Dipodomys merriami (noemb. 3♀ + 4♂). One (♀76) put up as study skin; this kangaroo rat photographed by Dr. Benson along with a Perognathus intermedius and a P. penicillatus.

Mr. Lenon left us here after Dr. Benson had purchased some of his surplus groceries; ~~[illegible]~~ Mr. Lenon, by mistake, left his axe with us.

We put up our specimens and then climbed Cerro Colorado for a survey as we had arrived here after dark yesterday. The crater was of an explosive type resulting in a mixture of ~~lava~~ igneous and metamorphic and sedamentary rock; however, where we trapped the ground soil was covered with cinders and some lava. The vicinity showed little promise; so Dr. Benson decided to push to Crater Elegante tho we were not sure of the rodd. If we missed Crater Elegante, the "road" (a few cars had passed by) was almost certain to take us to the coast where we are to go eventually anyhow. Our proximity to the coast and the probability of Indian encampment here was manifested by some fresh (ie, not fossil) marine shells and pieces of them.

Back in camp Señor Delgadillo shot two quail with a well-placed shot from the "kitchen"; so I went after the covey and round out the three. These are Gambel's

800± ft., Cerro Colorado, 28 mi. w. Sonoita, Sonora.

March 26, 1938

Quail and larger than the average northern California Valley Quail (other California quail I have seen to be larger than here, however). The scarity and poorness of cover and the somewhat tame character of the quail here would not make for much sport — too easy. The quail are a very welcome tid-bit to the table as previous experienced on the way to Papago tanks; Dr. Benson and I scareing many and bagging a brace alongside the road.

We followed a trail-road to Crater Elegante with some difficult in the cinders and sand; 3 or 4 times getting stuck, finally so badly that it was necessary to unload the truck to clear it. We made camp in a lava field:

900± ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora.

Here set out 50 mousetraps along the banks of a wash and one of its tributaries at dark.

March 27, 1938

In the 50 mousetraps caught: 2 Perognathus penicillatus (♀78, ♂79); 6 Peromyscus eremicus (4♂ + 2♀ no emb.; put up 4: ♀80, ♂81, ♂82, ♀83 no emb.), 1 Dipodomys merriami (♂84), 1 Dipodomys deserti (♀85 no emb.), 1 Neotoma albigula (♀86 no emb.). The kangaroo rats and the pocket-mice were caught along the banks of the larger wash where the vegetation was heaver and more sandy; the others in the tributary wash where it was very rocky in its cutting thru a heavy lava field. The cheek-pouch

900± ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora.

March 27, 1938, continued.

contents of the former were saved. After putting up the specimens (with which Dr. Benson helped me) we climbed the crater and with the use of the ~~Hornaday~~ Humboldtz map verified our position. Until we had made this survey and seen the inside of the crater we were not positive where we were.

From the crater rim the surrounding country was seen to be of the expected flat desert floor with the hills and mountains arising abruptly. From the steep slope of this crater many deep cutting washes radiate; these cut the lava fields and spread out, and some coalesce to form wider washes. The vegetation of the near vicinity is mainly creosote, ochotillo, ironwood, palo verde, soft succulents, mesquite, some patayos, saquaro and some ~~cat~~ cholla (+ many small cacti that I do not know). The trees are mainly confined to the washes; the creosote and ochotillo found everywhere.

Crater Elegante earns its name from the beauty of the stratified rock (running horizontally and completely around the inside in 7 or 8 wide rings) and the symetry of the crater-bowl which is nearly circular. Saquaros (as in other craters seen except Cerro Colorado), mesquite, and creosote grow on the crater floor where a dry pool surrounded by vegetation shows that water may stand there for a part of the year. The rim of the crater stand about

900±ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora

March 27, 1938, continued.

200±ft. above the desert floor, 500-600 ft. deep, and about a mile in diameter. This is by far the largest and most beautiful of the craters seen in the region. (Rain storms on Sierra Pinacate but only few drops here)

Evidence of mountain sheep was ever-present inside the rim from dropping, tracks, trails, and some beds. The latter I reached after some bit of perilous foot-work on a large ledge overhanging a clear 400+ ft. drop; near the beds the dropping were more numerous on the surface of the ground than the pebbles. This is by no means the only sign of mountain sheep in the vicinty; on the lava fields, in the washes, and smaller hills are dropping and tracks commonly. No live sheep were seen, however. At Cerro Colorado and Paso McDougal some fresh sheep tracks and droppings also seen (as were for coyote, too). Coyote tracks and drops are seen every day on the road and trap-lines. Señor Delgadillo traps almost every night for them but as yet without success. Badgers are not uncommonly evidenced by diggings; in the two miles or so round-trip to the crater I counted 10 badger holes, in the lava fields and have seen them on the borders of the washes.

On the way back from the crater I shot a Rufous Humming bird (♂ 88, March 28, 1938) which, with others, was feeding at the ocotillo blossoms (which are ~~commonly~~ almost

900± ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora

March 27, 1938

all in bloom in the area we have covered. Soon after this shot bagged a Caliope Hummingbird along my trap-line (♂ 74967, SBB; March 28, 1938). At almost sun-down set-out 50 live-traps along banks of small wash in lava field after having run over my mouse-trap-line which had been reset and left all day, but nothing was caught. Eight of the traps were sprung but empty; nine were so this morning — probably from large wood-rats or the larger Hang-aroo rats. While kneeling beside a white soft-succulent re-seting a trap, I was arrested by a loud, whirring close to my head — a female Rufous Hummingbird was after the flowers of the succulent, probing flowers on various stems, closer and closer, until it was less than a foot from my face — apparently entirely un-aware that collector with a hat on was so near. Its wings made a noise not unlike a propellor blade of an airplane (discount the motor noise), its tail moved up and down, opening and partially closing (showing the white-tipped rectrices), its bill opened and closed two or three times before and after insertion into the tiny flowers as it rapidly moved from flower to flower (only a few selected from each group), but I did not ~~observe that~~ see its tongue, nor could I ascertain any real picture of the manner of the wing movement other than the extreme rapidity of the beat and the excellence of the technique of manoeuvring

900±ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora

March 28, 1938

In the second-night stand of the 50 mousetraps caught only one ♂ Peromyscus eremicus and two ♂ Neotoma albigula (♂ 87) along the rocky-bank of the wash; nine of the traps were sprung and empty. In the 50 live-traps set in a small wash thru the lava fields caught one ♀ P. eremicus which was subsequently turned loose; it ran in a more or less straight line over the lava field away from our camp and also its home ground. Put up one of the wood-rats and the Rufous Hummingbird (♂ 88) shot last night. Helped Dr. Benson put up Señor Deladillo's specimens as the latter went out to set gopher-traps.

Set out trap-line at:

1100±ft., Crater Elegante, 34 mi. w. Sonoita, Sonora.

Some of the 50 mouse-traps on the outside of the rim, some on top of the rim, about half inside the crater's rim, and the balance on the west face, top, and east face of a brick-red lava-rock hill ~~just~~ at the south rim of the crater. (The wind has blown very strongly all day since dawn.)

March 29, 1938

Caught nothing outside the rim of the crater but on top of the rim in similar grey rock-and-cinder, ocotillo-and-creosote habitat caught 1 Perognathus baileyi (♂ 89; cheek-pouch contents saved), 3 Peromyscus eremicus (2 ♂ + 1 ♀ no cab), and 1 Peromyscus crinitus (♂ 90); inside the rim of the crater in the large rocks caught 1 P. crinitos (♂ 91; the pelage of this one

1100±ft., Crater Elegante, 34 mi. w. Sonoita, Sonora.

March 29, 1938, continued.

was very much lighter than the other P. crinitus here taken and the ones trapped by Señor Delgadillo on a rock-hill 3-4 miles farther west.); on the east face of the red-hill near creosote, ocotillo, and cholla (sparse vegetation) in the lava-rock caught 2 P. eremicus (1♂+1♀) and 2 dark P. crinitus (♂92, ♀93) None of the females trapped contained embryos. Put up specimens and prepared to break camp for short move to large wash in the creosote and sand. Upon arriving at this wash Dr. Benson decided it was not a good trapping ground; so we went on, getting stuck in the sand but not as badly as when we came in. Made camp at

675±ft., 3 mi. s. Cerro Colorado, 28 mi. w. Sonoita, Sonora.

Set out 50 mousetraps in mesquite-creosote area and 50 live-traps in creosote-sand.

March 30, 1938

Caught one Onychomys torridus (940♂) and 3 Dipodomys merriami (3♂♂; nothing in pouches) in the mesquite-creosote; in the live traps 2 D. merriami which were released. We put up specimens and broke camp for:

Sonoita, Sonora

Picked up mail, laundry, and information concerning game laws from game-commisioner; drove toward coast until 11 PM; made camp beside the road near Sierra Blanca.

50± ft., Punta Penasca [=Rocky Point], Sonora.

March 31, 1938

Arrived here via Pozo de Cipriano, Sierra Blanca, and Pozo Papalote; 66 miles over sandy wastes; got stuck in sand several times and wished for the portable running-boards that the fish-trucks carry to get them thru the sand. The bay of the Gulf of California where the fish-boats put in is very beautiful: turquoise-blue water contrasting with the white sand and dark-red lava with white mountains beyond the bay. The fisherman and the truck drivers have erected shacks of the native rock and every manner of debris at the edge of the water. The fish is trucked over the desert to the Los Angeles (California) market. None of the officials of the fish enterprise were at the settlement; so permission to camp at the fish-village could not be obtained. We went around to the other side of the lava hills and camped in the sand near where Dr. Benson and Mr. Johnson had camped when here before — similarly we got the truck well caught in the sand and dug in deeply.

We are camped just over the hill (75 ft. high) of lava from the water. The lava hill (or hills) is made up of large dark-red to red-brown rocks as surface with a few soft succulents growing in the more sheltered places. The wind blows strongly off the Gulf all day and most (?) of the night. From the base of the steep in-land slope of the hills the sand-dunes, well covered with creosote, grass, a sage-brush, and grass, extend as far inland as you can see to the distant desert peaks.

Set 50 mousetraps in the big rocks of the hill and

50± ft., Punta Peñasca, Sonora.

March 31, 1938, continued.

at the base at border of lava and sand; set 21 rat-traps in the rocks of hill.

Pinned down a lizard with a rock and shot four more in the lava and sand (95–99, inclusive). In response to the excitement of Señor Delgadillo, who set a mouse-trap down in the rocks less than a foot from two rattlesnakes, accompanied him and shot a four-foot rattlesnake (♂ 100) as Señor Delgadillo shot another beside the first (101).

April 1, 1938

Caught 2 Perognathus longimembris (♂ 102, ♂ 103) at border of lava in the sand; 2 Perognathous intermedius (♂ 104, ♂ 105; the former very dark pelage; the latter light; taken in consecutive traps 50 ft. apart), 3 Peromyscus eremicus (2 ♂ 5 and ♂ 106 which was of much lighter pelage than any others taken here by party), 1 Neotoma lepida (♂ 107 which was of light-tan and orange-tan and golden-tan pelage, not the commoner grey pelage of others here and elsewhere.)

Put up our specimens; I skinned the snakes (partially, leaving anterior and posterior in situ) which Dr. Benson later fryed for the piece de resistance (accent the last word) of our lunch; the white meat, tho tough (chewable tho) was very sweet and of excellent flavor. Not to be recommended as a regular part of the diet but well worth trying.

50± ft., Punta Peñasca, Sonora.

April 1, 1938, continued.

Set out 21 rat-traps in the large rocks; after dark set out 50 mousetraps on rocky-hill (windward side).

April 2, 1938

In rat-traps 8 Peromyscus eremicus (5♂; 3♀ no emb.) and no rats; in mousetraps 4 " " (4♂♂) and one Perognathus intermedius (♂108). Put up specimens; recovered four "lost" rat-traps with Dr. Benson who found in the sand near the beach a raccoon skull (5013, SBB).

Got the truck out of its hole in the sand, loaded it, and went up to the fishing village where we purchased some water (@ 10 centavos/gallon; it is hauled from Sonoita), borrowed a fish-line and hooks, and drove around the bay to:

50± ft., Cerro La Cholla, 6 mi. ~~nwnw~~ Punta Peñasca, Sonora.

Made camp near the beach on a large concrete slab which was (or was to be) the floor of a house. Set out 50 mousetraps and 10 rat traps in the granite hills.

April 3, 1938

Caught 2 Perognathus intermedius (♂109, ♂110), 1 Peromyscus crinitus (♂111), 3 P. eremicus (♂112, ♀113, and a ♀), and 1 Dipodomys lepida (♀116) in the granite-rock hills; a ~~Dipodomys merriami~~ (♂115) in the crushed granite flats between the rock-hills and the sand.

After putting up our catch (Senor Delgadillo helped me) Dr. Benson and I hiked across Cerro La Cholla to the larger bay (Punta Peñasca on far shore) shore where we saw a large sea-lion. That night after dinner we went again across the hills to

50±ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora.

April 3, 1938, continued.

fish, but had no better luck here than we had last night on the camp shore — no fish at all. (Set 50 mouse and 10 rat-traps).

April 4, 1938

In traps set along banks of a wash thru the granite, rock-hills caught 2 Peromyscus eremicus (♀118, ♀119 no emb.), one P. eremicus (♂117), 1 Dipodomys merriami (♂120), and ~~two~~ (one juvenile ♂) Neotoma albigula (♀121 no emb.). This trap-line left out for the day for possible diurnal forms; (~~the~~ none taken) then taken up and set along sides of rocky hills and in sand; ten additional rat-traps set out (the last-night's rat-line remaining in place).

During the day Dr. Benson and I took out the seine-net, repaired it, and, while looking for minnows in the shallows ran down a large sole (small halibut ?!) (2–2½ lbs) which I [redacted] fileted and fried for dinner — following a clam and oyster chowder (we have had oysters on the half-shell here, but the oysters are small and scarce.) A swim in the warm Gulf water served as both bath and enjoyable relaxation.

April 5, 1938

In the granite rocks caught 4 Peromyscus eremicus (3♂; 1♀ no emb.) and two Neotoma lepida (♂123, ♀124 no emb.; the ♂ had very light pelage); along bank of wash in the same trap that yesterday took the juvenile wood-rat caught 1 Neotoma albigula (♀125 no emb.); in the sand and ocotillo 4 Dipodomys merriami (♂122 and 3 ♀♀ no emb.).

Put up specimens; repaired traps; sought lost traps; set out 50 mouse traps in sand and sage. Shot

50±ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora.

April 5, 1938, continued.

(126 and 127) two lizards in the sand and ochotillo and an iguana (128) in the granite blocks. The iguana I had seen yesterday as it climbed sidewise into a narrow crevase; so to-day at about the same hour I tried to sneak up on it. It was much too quick for me; I shot it thru the crevase and then spent almost a half-hour breaking and pounding away the granite blocks before I reached the reptile.

Our camp here on the Gulf is such a delightful contrast to the "fly-trap" (the flys bite thru clothing and swarmed over everything while we were skinning rats and eating) at Punta Peñasea that we just left. The Gulf is no more beautiful here than at Punta Peñasea, but we are right at the shore and enjoy it more thereby. The small bay here is shallow 6-10 ft. deep and, when the tide (big and fast — comes and goes with real current) is out, is a level, sand-flat where we gathered a few clams for the chowder. There are many muck-holes in the flat left by the stingarees; many of these holes clearly show the entire outline of the skate's body.

There are great numbers of shore and water birds on this bay. Three or four times a day what-seems-to-be-the-entire bird population congregate in one spot with much diving from surface and air — presumably feeding on schools of small fish. Once they were so grouped just off shore from camp as I returned

50±ft., Cerro La Cholla, 6 mi. nnw Punta Peñasca, Sonora.

April 5, 1938, continued.

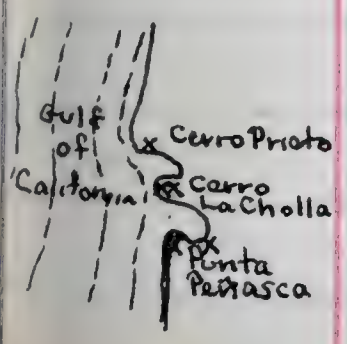
from a trap-line at dusk; I grabbed the .22 cal. rifle and crawled to within 50 yards of the nearest birds and tried to pick off a drake but, shamefully, I missed. The resulting chaos was an inspiring sight: literally hundreds of birds in full retreat with gulls and terns screaming, plovers crying, ducks beating the water white and whirring into formation.

Set out 50 mousetraps in the sand and sage just off the bay shore.

April 6, 1938

Caught 7 Dipodomys merriami and 2 Perognathus longimembris (♀ no emb. 129; the other eaten to almost nothing, probably by an Onychomys torridus) The kangaroo-rats of the party lumped together equalled 19 (12 ♂♂ and 7 ♀♀ [no emb]); the cheek-pouch contents were saved. A large percentage of this material consisted of small, white, onion-like tubers found once or twice before. Where I got the rats many small pits were dug into the sand, perhaps in digging out these tubers. Shot a lizard in the sand and rock (130).

Cerro La Cholla is a small sierra of granite blocks in a series of six or eight steep peaks rising from the level sand and cut by many washes. It is located on the Gulf of California between the nw± shore of the bay of Punta Peñasca and the se shore of the smaller bay between Cerro La Cholla and Cerro Prieto. On and near the granite ocotillo, cholla, and soft succulents dominate.



50± ft., Cerro La Cholla, 6 mi. ~~w~~ nw Punta Peñasca, Sonora

April 6, 1938, continued.

After putting specimens and repairing traps we broke camp and returned to Punta Peñasca where we bought water and half-dried fish. Drove over the sand (getting stuck a few times) to:

100± ft., Cerro Prieto, 6 mi. nw Punta Peñasca, Sonora.

Here we made camp on the sand among the dark lava rocks of which the hill is composed. Ochotillo and cholla are the dominate plants. Set out 50 mousetraps and 17 rat traps on the rock-hill; a few of the mousetraps trailing off into the sand bordering the base of the hill.

April 7, 1938

Caught 3 Peromyscus eremicus (♀ no emb. 131, ♀ 132, ♂ 133), 3 Neotoma lepida (♂ 134, ♂ 135, ♀ no emb. 136), and 4 Dipodomys merriami (3 ♂'s; 1 ♀ no emb.); the latter were not ~~put~~ up, but cheek-pouch contents saved. Saw a Great Horned Owl on the hill at dawn when on trap-line without my shot-gun; the owl allowed me to approach within 30 yards before leaving perch. After putting up specimens (Dr. Benson helped me) I went back for the owl but failed to find it; shot an iguana (137) [= chucha walla by Mexicans] in the dark rocks at edge of the sand and saw a second dart into a kangaroo-rat hole under a creosote-like bush which was 50-60 ft. from the rocks out in the soft sand.

After lunch we broke camp and drove back

Cerro Prieto, Sonora to Sonoita, Sonora.

April 7, 1938, continued.

over the sand (getting stuck a few times). We stopped for half an hour at Pozo Papolote (a federal project). Dr. Benson and Señor Delgadillo helped the well-keeper untangle the cable of the well-winch, while I watched the "amateur" operator swing the ½-1 ton casing-bell bailer around with amazing speed and disregard for life and property. After he threatened, by his inability to control the contraption, (tower and winch with power from 4-cyl. gasoline engine) to tear down the tower, I gave him the rabbit's foot from my key-chain (he did appreciate it), and we left [redacted] not getting stuck once over the remainder of the sand. Drove until after dark to camp at:

350± ft, Batamote, Rio Sonoita, 39 mi. wsw Sonoita, Sonora

Set out 50 mouse-traps in the dark (half-moon giving good light) along banks of river in sand among mesquite and creosote.

April 8, 1938

Caught 2 Dipodomys deserti (1♂+1♀ no emb.) and 5 D. merriami (3♂'s+2♀'s no emb.); the total of the party in these rats 4 D. deserti (3♂'s+1♀ no emb.) and [redacted] 13 D. merriami (7♂+6♀ no emb.). No embryos; cheek pouch contents saved. Broke camp and drove to:

Sonoita, Sonora

Picked up mail, answered it, bought a few supplies, interviewed the local (federal man as are all

Sonoita, Sonora. April 8, 1938, continued.

game-wardens of the Republic) game-warden, Señor Tomas Moreno, again, and then the custom-officials at the border. The latter agreed to Dr. Benson's taking our study-skins over the line to mail to the Museum from Aho, Arizona. Picked up boxes to pack rats in, and our laundry from Señor Quiroz's maid, Lucye. Drove out to the flour-mill (owned by Señor Quiroz; but now dismantled) where we made camp: 1400± ft., 1 mi. ne Sonoita, Sonora

April 9, 1938

Packed specimens with cotton and paper-tubes from magazine pages. Dr. Benson drove the truck over the border in the morning and returned in the early afternoon, with the rear motor-mountings broken; these mountings had been repaired on another trip in Mexico by a Mexican "blacksmith" — competent mechanics are very rare in the Republic.

In the meantime Señor Delgadillo and I stayed in camp writing notes, setting rat traps, etc. Señor Delgadillo caught a round-tailed ground squirrel (♂ JES 138) in mesquite area. I shot a lizard in the sand and sage (139).

Set out 123 mouse-traps: 50 in dense mesquite of flood-banks of Rio Sonoita; 50 in rocky hills where there is much saguero, papayo, palo verde, creosote, and some cholla; 23 in the level sand (and sage) bordered by dense mesquite

1400± ft., 1 mi. ne Sonoita, Sonora.

April 10, 1938

In the 123 mousetraps: 50 in dense mesquite caught only two Dipodomys merriami (1 ♂; 1 ♀ no emb.) in clearing; 50 in rocky hills caught 2 Perognathus intermedius (140 ♂; 141 ♀ no emb.; cheek-pouch contents of the former saved.) and 3 Peromyscus eremicus (142 ♂; 143 ♀ two emb.; 144 ♀). (♂ 142 first thought to be P. crinitus, but Dr. Benson decided it ~~an~~ eremicus). Surprised that no mice were taken in the dense mesquite; the trees provide food and over-head cover, but there is little ground cover due to over-grazing and the extreme density of the mesquite. The lack of ground-cover and periodic flooding probably keep the mice out. A contrasting catch was of 14 Dipodomys merriami in 23 mousetraps (8 ♂; 6 ♀ no emb.) (cheek-pouch contents saved) in the "sand and sage" area which is border by the mesquite. Here in typical kangaroo-rat ground near the mesquite for amply food supply along with heavy ground vegetation at edge of mesquite the rats abound as shown by high trap percentage.

Dr. Benson finished repairing truck in late afternoon; so broke camp and drove two miles beyond Sonoita and made camp for the night.

April 11, 1938.

Drove from Sonoita to Quitovac to Costa Rica Ranch to Cozon to San Luis to St. Elena and camped at:

1775±ft., 8 mi. S. San Luis, 34 mi. nw. Caborca, Sonora.

April 11, 1938, continued.

St. Elena, tho only 2 miles from this camp, is very small, a mining camp (unstable), and not on any map; so the above directions chosen.

Set 50 mousetraps and 7 rat-traps along banks of wash and on hillside.

April 12, 1938

Caught 7 Perognathus intermedius (♂ 145-8; ♀ 149-51 NO EMB.), (cheek-pouch contents saved), 4 Peromyscus eremicus (♂ 152, 153; ♀ 154, 156 NO EMB.), and 1 Neotoma albigula (♂ 155). The trap-line ran thru the typical terrain of this region: hills with rocky surface of tan-brown granite-like rocks (much quartz mixed in) cut with many small arroyos and some larger washes; the vegetation is much heavier (3-4 times or more) than the level desert and is predominantly palo verde and creosote with good representation of saguaros, patayos, ochotillo, nopal, chollas and barrel-cactus, also many soft succulents and other small forms that I do not know. The creosote, nopal, ochotillo, and a low-growing, unstalked cholla are in bloom.

Put up specimens with help from Dr. Benson and Señor Delgadillo before they left to rob a bee-hive which Dr. Benson discovered in the rocks on his trap-line. What little honey there was in the hive was burned when a woodrat nest below the hive caught fire from the smudge-fire. Dr. Benson shot two quail for the table.

Set out 50 mousetraps and 7 mousetraps in area adjacent and similar to that of last night.

1775±ft., 8 mi. s San Luis, 34 mi. nw Caborca, Sonora.

April 13, 1938

Caught in area adjacent ~~and~~ similar to that of last night's trap-line 1 Perognathus intermedius (♀157; no emb; cheek-pouches empty.), 1 Perognathus baileyi (♂158; cheek-pouch contents saved), and 4 Peromyscus eremicus (4 ♂'s).

Broke camp and drove toward Caborca; camped:

1000±ft., 10 mi. nw Caborca, Sonora

April 13, 1938, continued.

Set out 50 mousetraps and 7 rat-traps ~~and 50 live traps~~, on rocky hill among (in bloom) palo verde, creosote, and torote; 50 live traps on wash-banks.

April 14, 1938.

Caught 4 Perognathus intermedius (♂161, 162; ♀163, 164 No emb) (cheek-pouch contents saved) and two Neotoma albigula (♀159, 160 No emb) Both woodrats had bot-fly larvae on throat. (live-traps empty).

Broke camp and drove to Caborca where we sought a welder to fix the truck; no adequate apparatus available; so drove out of town and made camp:

925±ft., 1 mi. e. Caborca, Sonora.

April 14, 1938, continued.

Set out 50 mousetraps in dense mesquite.

April 15, 1938.

Caught 6 Perognathus penicillatus (all ♂'s: 165, 166, 167). Señor Delgadillo caught a round-tailed ground-squirrel which I catalogued (168 ♀ no emb). Cheek-pouch contents of mice saved. Shot two lizards from mesquite branches. (169, 170).

Dr. Benson drove the truck to Miña Juarez, near Tagitos, where the rear-chassis shackles were brazed to the axel. While

925± ft., 1 mi. e. Caborca, Sonora

April 15, 1938, continued.

Señor Delgadillo watched camp, I crossed the Rio Altar (almost dry except for irrigation canals) to:

1100± ft., Cerro Cañeda, 2 mi. e. Caborca, Sonora.

April 15, 1938, continued.

Here on the steep, west-facing slope in rocks among palo verde, creosote, sagauro, nopal, and others set 50 mouse-traps and 7 rat-traps.

April 16, 1938

Caught 4 Perognathus intermedius (♂ 171, 172, 173; ♀ 174 no emb), 6 Peromyscus eremicus (♂ 175, 176, 177, 178; ♀ 179, 180: no emb), and 2 Neotoma albigula (♂ 181, ♀ 182: no emb.). Shot a Citellus grammurus ground-squirrel high up in the large rocks (♀ 183: no emb) and two lizards, 184 in sand and 185 on mesquite branch.

April 17, 1938

The mesquite dominating the area is different from most localities of occurence so far visited in that is very dense and very green in foliage. Much more water is available to it here (camp only 300-400 yards from river bank) near the Rio Altar, and the adjacent area is cut by many irrigation canals.

After much repairing and miscellaneous camp-chores broke camp and drove toward Puerto de Lobos; camped at:

900± ft., 1.6 mi. sw Las Alesnas, 20 mi. wsw Caborca, Sonora.

Set 50 mousetraps in the sand among creosote;

900± ft., 1.6 mi. sw Las Alesnas, 20 mi. wsw Caborca, Sonora.

April 18, 1938

Caught 1 Perognathus pencillatus (♂ 186), 1 Onychomys torridus ~~leucogaster~~ (♀ 187: noemb), 15 Dipodomys merriami (50♂♂ put up: 188, 189, 190, 191, 192; Dr. Benson put up 5♀♀ from the party catch of 48 kangaroo rats: ~~of~~ 30♂; 18♀; cheek-pouch contents saved.).

Set 50 mousetraps along same trapline as last night (on theory of having trapped-out most of the less desirable species) and 50 live-traps across wash in sand and creosote.

April 19, 1938.

Caught on second run mousetrap-line 4 Perognathus pencillatus (♂ 198, 199; ♀ 200, 201 no emb.; cheek-pouch contents saved) and 6 Dipodomys merriami (4♂♂ and 2♀); in live-traps 1 Perognathus longimembris (♂ 194; in open space of creosote in sand) and 6 Perognathus pencillatus (♂ 195, 196, 197; 3♂♂ turned loose; cheek-pouch contents saved). Shot a lizard in the sand (202).

Broke camp and drove on, after having been given some good water from a 158 ft. deep well at Rancho Las Alesnas, into the pass, Puerto Blanco, and made camp at:

950± ft., 5 mi. sw Las Alesnas, 23 mi. wsw Caborca, Sonora.

April 19, 1938, continued.

Went ½± mi. nw. of camp to granite (rotten) and quartz hill and set 50 mousetraps and 7 rat-traps among creosote, torote, ocótillo, saguaro, cardon (in bloom), paloverde, cholla, white succulents, and small cacti.

250± ft., 5 mi. sw Las Alesnas, 23 mi. wsw Caborca, Sonora.

April 20, 1938.

On the rocky hill caught 4 Peromyscus eremicus (♂206), +3 ♀ no emb.
7 Perognathus intermedius (♂207, 208, 209, 210; ♀211, 212, 213, no emb.),
5 Neotoma lepida (♂203, 204; ♀205 no emb.; all infected by bot-fly larvae).
Shot a lizard in the sand (214). Shot a Gamble's Quail for table.

Broke camp and drove over sand and silt to Gulf of California at:

20± ft., Puerto Lobos, Sonora.

April 20, 1938, continued.

The fishing village here is very small (only ½ dozen or so shacks) and dirty. The truck drivers told us that there was no road from here to Puerto Libertad, contrary to information given in Caborca.

Made camp at edge of sand dunes. Set 50 mouse-traps and 50 live-traps in sand dunes which are sparsely covered with ~~[illegible]~~ tarote, a low-growing, dense bush, and some cholla. The sand dunes covered this area to the base of the hills which are 2-4 mi. inland to the ne but come down to the beach farther south on the bay and coast.

April 21, 1938.

Caught 1 Perognathus longimembris (♀215 no emb) and 4 Onychomys torridus (♂216, 217; ♀218 3 emb., 219 4 emb.). ♂216 was moulting. Many of the mousetraps were robbed by the "light-footed" pocket mice and beetles. Cataloqued a lizard (220) shot on sand dune by Señor Delgadillo.

Tried to go fishing but no bait available; so were satified with a bath in Gulf; broke camp and drove to:

200± ft., 3 mi. n. Puerto de Lobos, Sonora.

April 21, 1938, continued.

Here set out 50 traps in sand at the edge of the lava among creosote and white brush and 50 live traps on sand dunes; also 7 rat-traps at edge of lava.

April 22, 1938

Caught 2 Perognathus intermedius (♂221 was badly chewed up by red-and-black ants; ♀222: no emb.) (cheek-pouch contents saved), 6 Peromyscus eremicus (saved 2: ♂223; ♀224 no emb.), 4 Dipodomys merriami (♂225, 226; ♀227, 228 no emb.; nothing but bait in cheek-pouches), 1 Neotoma albigula (♂229), and 2 Perognathus longimembris (♂230; ♀231 No emb.; cheek pouches empty.). The latter two taken in live-traps on sand dunes; the rest at edge of lava.

Broke camp and drove back toward Caborca as there apparently is no road direct to Puerto Libertad; again got good water at Las Alesnas well — nine miles beyond making camp at:

900± ft., 13 mi. sw Caborca, Sonora

April 22, 1938, continued.

Set out 50 mousetraps and 50 livetraps on the level, sandy soil supporting some grass & scrub-brush but dominately paloverde, creosote, and very large cholla. A few woodrat houses were seen under the larger trees, but we did not trap for them here. Dr. Benson reported having seen a deer but had no gun. (We now have permits for taking 2 deer, also 2 peccary; the

<u>900± ft., 13 mi. sw. Caborca, Sonora.</u>

April 22, 1938, continued.

permits grant the taking of 20 mammals, reptiles, and amphibians at each locality — no mention or permission to collect birds, however).

April 23, 1938

Caught 7 <u>Perognathus penicillatus</u> (5♂'s and 2♀'s no emb.; none saved), 2 <u>Onychomys torridus</u> (♂232; ♀233 no emb.), and 19 <u>Dipodomys merriami</u> (10♂'s and 9♀'s; 5♂'s put up: 234—238.) Cheek-pouch contents of pocketmice and kangaroo-rats saved.

The total catch of the party numbered 110 rodents in 150 mousetraps — very high compared to other places tried. The high population may be correlated with the heavier vegetation, especially notably is the ground cover of grass and scrub-grass. Much of the pouch contents was the grass-seed; so both cover and food ~~very~~ abundant.

Dr. Benson reported more deer this morning on trapline — six, but too far for .22 shot.

Broke camp and drove 15.4 miles to <u>Caborca, Sonora</u> where we bought supplies, got a haircut and shave, and had an excellent dinner. Joined a party of 20-30 young Mexicans who serenaded a leading citizen in celebration of his 50th birthday — he reciprocated by inviting all inside for a bottle of beer and dancing (we accepted both.) Returned to our old camp by the irrigation canal for sleep.

Caborca, Sonora

April 24, 1938.

Bathed in irrigation ditch and broke camp for Puerto Libertad. Drove 5.2 mi. to Pitiquito, 24.3 mi. to Bamori, here took the larger but wrong road (very often a road forks off with no indication of the ultimate of either) which took us 12.0 mi. to La Cienega where we had lunch and found our error. It was necessary to return to Bamori then 6 mi. to Puerto Calaveras. Along road Dr. Benson noticed kangaroo-rat mounds that looked like those of D. spectabilis — none having been recorded from here; so we made camp in vicinity of mounds:
1900± ft., 16.7 mi. SW Bamori, Sonora

Set 7 rat-traps, 10 Shuyler traps, 4 #91 jump-traps for the banner-tailed kangaroo rats; also set out 50 mousetraps after dark.

April 25, 1938.

Caught 1 Perognathus ampulus (sp?) (♂239), 1 Perognathus baileyi (♂240), 1 Onychomys torridus (♂241), 4 Dipodomys spectabilis (♂242, 243, 244; ♀245 NO EMB), and 11 Dipodomys merriami (8 ♂'s and 3 ♀ NO EMB.). Cheek-pouch contents of pocket mice and kangaroo-rats saved.

The terrain here is level, of rocky, gravel surface, and covered well with vegetation: creosote, palo verde, palo fierro, and saguaro mainly; some cholla, torote, bara blanca, barrel-cactus, cardon, and grass.

There was some doubt in our minds about the exact location of this camp — the hills without

1900± ft., 16.7 mi. sw Bamori, Sonora.

April 25, 1938, continued.

conspicuous identification characters. However, we found, when we broke camp and drove on, that we were less than two miles n. from Rancho de la Primavera where we got water and information. The mountains 4-5 miles east of camp are called the Sierra de Jojoba with Sierra del Viejo 12-15 miles to the west and northwest. Drove on 8.6 miles to El Datil, 12.3 mi. to Puerto del Picu, and 18.7 miles more to Puerto Libertad where, it being after dark, we had some difficulty find a camp near the rocky hills. However, we left the road and drove straight (±!) to the base of a steep, rock-hill and made camp:

300± ft., 3 mi. nnw Puerto Libertad, Sonora.

April 25, 1938, continued.

Set out 50 mousetraps in dark along walls of arroyo cutting steep, rotten-granite hill among creosote, torote, ocotillo, copal, bara blanca, and palo fierro and palo verde.

April 26, 1938.

Caught only 3 Peromyscus eremicus (♂ jv. 246; ♀ NO EMB. 247, 2 EMB. 248; both ♀ had well developed mammae). The party catch was also poor; total for the 3: 1 Perognathus intermedius and 8 Peromyscus eremicus. Put up specimens and broke camp; drove to Puerto Libertad after scouting around a bit. The village consists of 6-8 shacks

Puerto Libertad, Sonora.

April 26, 1938, continued.

and one good building which was formerly a hotel but now a government building (falling into disrepair — racing pigeons in lobby and fisherman playing poker there). There is a well within 100 ft. of the water's edge with good water at only 20 ft! This is quite different condition from the other, tho larger, fishing villages of Punta Peñasca and Puerto de Lobos — no water at either of the latter. Only one fishing boat here — mainly skiffs (some with outboard motors) used here; the other two ports had 6-10 20-odd ft. seaworthy power-boats.

The birds seen on Gulf shores are: ospreys, turkey vultures, gulls (Heermann's and California), scaup ducks, plovers, sandpipers, avocets, black-necked stilts, black turnstones, surf-birds, terns, and brown pelicans. The ospreys and turkey vultures were seen soaring at the air-upshoots of the sea-cliffs; the rest seen mainly as flocks, on shore or water, tho some singly. By far the greatest numbers (kinds and individuals) were seen at ~~the~~ the bay of Cerro La Cholla near Punta Peñasca; here main terns, ducks, gulls, and pelicans especially.

Incidentally, last night for supper we ate the hind quarters and hind legs of the banner-tailed kangaroo-rats; the meat is delicious and sweet. At last camp and here shot a quail from camp. The males are separating from coveys; some seen already paired off.

Puerto Libertad, Sonora.

April 26, 1938, continued.

The wind was blowing too hard for the skifs of the fisherman; so we again missed a chance to see them catch the big ones and wet our new fish-hooks. Left the village for the rocky hill close by; made camp:

100± ft., 1 mi. n. Puerto Libertad, Sonora.

Set out 50 mousetraps on rocky hill of granite among torote, palo verde, copal, ocotillo, some creosote, saguaro, and palo fierro; set out 50 live-traps in gravel-covered yellow soil near the granite hill among creosote, ocotillo, palo verde, torote, barabanca, and pitayo.

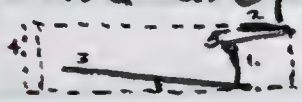
April 27, 1938.

Caught 1 Perognathus intermedius lithophilus Huey (♂ 249) (topotype), and 5 Peromyscus eremicus (3 juveniles and ♂ 250; ♀ 251 No emb.) on the rocky hill; nothing taken in live-traps (Dr. Benson got one Perognathus baileyi in his live-traps). Señor M. Delgadillo found a mousetrap on his trap-line that was probably lost here by Huey of the San Diego Museum of Nat. History when he was here three years or more ago; this trap was besides a source of amusement a good clue that we had trapped at the exact type locality for the topotype of Huey's pocket mouse.

100±ft., 1mi. n. Puerto Libertad, Sonora.

April 27, 1938, continued.

The apparent scarcity of rodents here is probably accountable to the substrate rather than the vegetation which is much the same as many other more fruitful trapping areas. The granite of the hill does not lend itself readily to burrowing; there are few crevices tho numerous small caves suitably for wood rats (tho only two houses seen.) The zero catch in the livetraps I can not explain nor approach explanation; for the vegetation is heavy enough for cover and food, and the soil burrowed and burrowable. I am not satisfied as to the effectiveness of this type of livetrap: tin-box 2"x2"x6" with forward-dropping door set off from floor-treadle:



mouse steps on treadle(3) releasing the trigger(1.) which is holding front-door(5) open, and front-door falls closed with safety-lever(2) falling in behind to hold door; to facilitate the removal of mice the rear of box also has a door(4).

Put up mice and broke camp; drove thru the fishing village(after having lunch and fishing while writing notes; Señor Delgadillo and I each caught a halibut.) and around the bay to opposite headland and made camp:

20±ft., Punta Cirio, 5 mi. s. Puerto Libertad, Sonora.

April 27, 1938, continued.

Saw 4 or 5 whales spouting ¼± mi. off shore; we saw them before at Puerto Lobos but not so close to shore. While setting my mousetraps in the sand dunes (among a bunch-grass(?) and occasional torote) the sunset on the bay silhouetting the steep rock-sierras across the water — black and purple peaks above silver water — where many schools of sardines shimmered, the speckled sea-trout soon broke water in the midst of a large school 50± yards off shore; then blowing and swimming fast came a school of six porpoises — the sea-trout no longer broke water. The porpoise patroled a small area close to shore then for ten minutes while I watched them (also the sunset and whales). I was quite certain that they (the porpoises) made a series of muffled grunts while under and at the surface of the water (not the blowing noise of breathing); however, I could get no confirmation of this from Señor Delgadillo or Dr. Benson or subsequent observations when light was good, and birds absent. We heard the grunts many times (at first thought to be sea-lions but none seen) when porpoises patroling along beach (deep water 30' off shore), but could not be absolutely sure of the origin of the sound. (Tried fishing after dark, but no luck.)

20± ft., Punta Cirio, 5 mi. s. Puerto Libertad, Sonora.

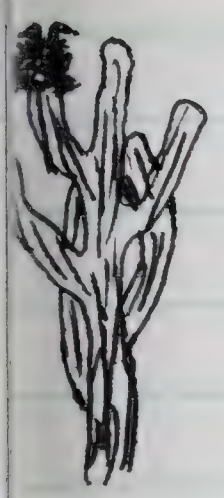
April 28, 1938

From mousetraps in the sand dunes took 3 Perognathus longimembris (♀ 252, 253, 254; no emb.; cheek-pouches empty), 5 Onychomys torridus (4 juveniles and ♂ 255), and 4 Dipodomys merriami (♂ 256-59; cheek-pouch contents saved). From tracks and burrows it was plain that Dipodomys deserti had set off 10-12 traps on a large, ~~[illegible]~~ little-vegetated sand dune.

Both Señor Delgadillo and Dr. Benson helped me kindly to finish up specimens; so we could fish a bit while writing notes; (not ungrateful) I caught a speckled sea-trout (10± lbs) and a small sea-bass (15± lbs); however, we ran out of bait before we even finished our notes and caught no more fish. While we were at the beach the whales were blowing off shore with much noise, the porpoises patroling (and, I still think, making those aforemented grunts), and Herman gulls calling and ospreys in the distance. While on trap-line at dawn, I saw an osprey fly out of the sand-dunes and hit the water at an acute angle with much splash, raise off the water shaking itself a couple of times; then a straight drop (not approaching the nice technique of a tern, however) into the water again, but this time came up with a fish which it carried with both feet as it flew (shaking feather several times) back over the sand dunes toward a

20± ft., Punta Cirio, 5 mi. s. Puerto Libertad, Sonora.

April 28, 1938, continued.



an area of cardon where nests of sticks were seen high on these large cacti (later saw six ospreys in air there at one time as we drove out) (also saw 2 birds in one large nest).

On the way to this point (yesterday, the 27th of April, 1938) saw a coyote ahead of the car in area where fisherman discard the heads and entrails of the market-fish; we chased it in truck as it paralleled road, and I took a shot at it as it crossed the road but missed. Presumably this coyote came to feed on the fish heads as these beasts are known to do at fishing ports. We have seen their tracks often in the dunes (and occasionally kit fox also; as I did this morning). [redacted] Feeding of the heads were 30+ turkey-vultures and 15+ ravens.

Broke camp; drove toward Hermosillo, shirted Puerto Libertad; drove 18 mi. to Puerto Del Pico, (3 mi. farther seeing first Dipodomys spectabilis mound), and 12 mi. farther to El Datil where we had dinner with fish à la Seri (cooked whole in ground under coals as Seri Indians and others made famous); the fish was excellent.

Drove on 10 miles until after dark and made camp off the road.

Puerto Libertad, Sonora to Hermosillo, Sonora.

April 29, 1938.

During the night a thunderstorm caught up with us — much lightning and thunder but only enough rain to settle dust. Drove on 5 mi. to Pozo St. Ignacio, 14 mi. to Garambollo, 16 miles to Rancho Mesquite Gordo (where much anxiety manifested for a seven-year-old girl who disappeared yesterday afternoon; we were asked to report same to the comisario at the next town; Dr. Benson and Señor Delgadillo did so.), 22 miles to Pozo Crisanto, 9 miles to turn onto Nogales-Hermosillo main-highway at 218 km. sign (a mile or so back saw last spectabilis mounds), 23 mi. to Nuñez (the now wide, gravel-road permitting speed of 35 m.p.h), and 21 more miles into Hermosillo.

Hermosillo, Sonora.

Drove to dwelling of Señor Delgadillo's wife and six children; here changed clothes and then went down town, collected mail, and had "brunch" (only cookies and water since last night). Returned to Señor Delgadillo's and packed study-skins, skulls, reptiles, and cheek-pouch contents for shipment to MVZ. After dinner drove outside town and spent night beside the road.

April 30, 1938.

Returned to town; tried by way of permits to get specimens across line direct to MVZ, but found they must be inspected at Nogales; so sent via Wells Fargo; answered mail; bought supplies; and drove to:

650± ft., 11.3 mi. w. Hermosillo, Sonora.

April 30, 1938, continued.

Made camp off the road and set 50 mousetraps and 50 live-traps on tan, sandy soil sparesly covered with dry grass among palo verde (many in seed), mesquite, palo fierro trees (dominantly) with some pitayo, cholla, and bara blanca.

May 1, 1938.

Caught 12 Perognathus penicillatus (3 in live-traps turned loose; put up ♂ 263-67; cheek-pouch contents saved), three ♂ Dipodomys merriami (cheek-pouch contents saved), 2 Onychomys torridus (♂ 267 and 3 emb. ♀ 268; ♂ 267 moulting), and 3 Reithrodontomys sp. (♂ 260 and ♀ 261, 262 no emb.; species not known.)

The surplus rat were thrown just beyond camp; we watched ravens and cara-caras fight over them; three Audobon's cara-caras first arrived, and fought among themselves. The cara-caras held the rats in their feet and tore at them with the beak, but the ravens each spiked one with the bill and flew away to eat.

Broke camp and drove toward Rancho Libertad but missed the road and arrived at our proposed second camp after Rancho Libertad at a:

220± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

Here we were cordially welcomed by the ranch-owner, Jim Bliven, an American who has managed this 12,360 (5,000 hectares) acre-ranch for 30 years.

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 1, 1938, continued.

Mr. Bliven showed us where we could comfortably camp under a large mesquite tree in a corral near the well (with windmill, gasoline pump, and brick-tank).

Set out 50 mousetraps and 50 live traps in a wheat-field next to a corn-field and bordered by mesquite trees.

Dr. Benson, Señor Delgadillo, Jose Maria Coronado, and I used the "Borell-method" to catch bats at night by stretching wires close to the surface of the water of the brick-tank( ). We used only two wires in a V. I was skeptical of this small surface-coverage, but the two wires stopped three Mastiff bats, two Brown bats, and six Mexican Free-tailed bats. I had seen some pipistrels flying while putting out my traps, but we were too late with the wires.

May 2, 1938.

In the mouse-traps in the wheat-field caught 1 Perognathus flavus sonoriensis (topotype) (♂269), 7 Reithrodontomys sp. (♂270-274; ♀275, one emb. 276, no emb.), one ♂ Perognathus penicillatus (not saved), 4 Perognathus baileyi (2♂'s not saved; ♀277, 3 emb. 278, no emb.), and 2 Peromyscus eremicus (♂279, ♀280, 2 emb.).

In the live-traps 5 Perognathus flavus sonoriensis (topotypes) and 3 Reithrodontomys sp. These mice saved in live-traps to be put up later. (cf. p. 68).

Put 5 of the bats taken last night at the

270±ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938, continued.

water-tank: Eumops perotis (♂281), Eptesicus fuscus, (♀282 no emb.), and Tadarida mexicana (♂283, 284, 285.)

Mr. Jim Bliven told us of the previous collectors at Costa Rica (he was in California for visit when Dr. Benson was here two years ago): the Sheldon party, the Lamb party, Winthrop with Vernon and Bernard Bailey, and others he wasn't sure of. He even remembered the latter party finding drowned the type and only specimen of Perognathus flavus sonoriensis Goldman. Mr. Bliven told us of the large herds of antelope formerly here, but now very rare due to the hunters slaughtering them by giving chase in the open-ground in autos.

Set out 50 mousetraps and 50 live-traps in corn-field and wheat-field bordered by mesquite.

Dr. Benson improved our Borell-bat-trap by using four water-pipes to tie six wires in ~~three~~ cross-lines: . The water in the tank was pumped up to about 6-10" deep; the wires were about 2" above the water. We caught: 8 mastiff bats, 8 brown bats, and 16 Mexican free-tail bats.

May 3, 1938.

In the wheat-field and cornfield (most in latter) caught in mousetraps: 1 Perognathus flavus sonoriensis (topotype: ♀297 no emb.), 1 Perognathus ~~baileyi~~ penicillatus (not saved), 3 Perognathus baileyi (♂298, ♀299 no emb.), 9 Reithrodontomys sp. (6 ♂♂

270±ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 3, 1938, continued.

and 3♀'s; not saved), and a juvenile Peromyscus eremicus (not saved); in live traps: 1♂ Perognathus penicillatus (dead in trap), 7 Reithrodontomys sp. and 5 Perognathus flavus sonoriensis (topotypes). Put the latter five: ♂ 291-294; ♀ 296 (6 emb.); and the five pocket-mice saved alive from yesterday: ♂ 286-87, ♀ 288-290 (no emb.); of these ten: ♀ 288, 289, and 296 were moulting.

Dr. Benson suspected the Reithrodontomys sp. are an entirely new species; so we have taken good series. Probably the 3 harvest mice (260-262), I caught 11.3 miles w. of Hermosillo are the same form.

Here at Costa Rica the live-traps have come into their own — for the most harvest mice and pocket-mice (P. f. sonoriensis) that were especially wanted were taken in the tin-boxes and not in the mousetraps. So, previously stated to the contrary, I must admit that under particular circumstances the tin-boxes are probably more effective in taking small mice than the "museum special" mousetraps.

Dr. Benson in setting his mousetraps at the edge of the field caught many Perognathus penicillatus near the mesquite in sandy soil and many P. baileyi near irrigation ditch at mesquite border on harder ground while the traps out in the wheat-field and cornfield caught few of those pocket-mice but many P. flavus. Aside from pocket-mice, habitat restriction was also seen in that few Peromyscus eremicus were

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 3, 1938, continued.

taken in the fields but common outside, and the harvest-mice were not at all found at field-borders but the most common mouse in the corn and wheat fields.

Put up specimens and then repaired the bat-trap by putting wires more taunt and closer (1") to water in effort to get the early flying pipistrells. Tho we got 1 mastiff bat, 3 brown bats, and 8 Mexican free-tail bats, we ~~got~~ caught no pipistrells.

May 4, 1938

Put up the brown bat series and the remaining three mastiff bats which all were kept alive since night of May 2, 1938. Many of the Mexican free-tails had escaped; the remainder were freed. [redacted]

The specimens of May 2, 1938: Eptesicus fuscus: ♂ 300–303, 306-7 and ♀ ~~275, 276, 277~~, 304, 305, 308: no emb. and Eumops perotis: as skeletons only: ♂ 309, 310 and ♀ 311 no emb.

One additional mastiff bat Dr. Benson took from the trap in the morning; probably in tank all night having been trapped after we retired. This bat was in sad condition — wet and appearing fatigued and half-drowned; it was hung on a cloth under our camp-mesquite tree where we watched it while working on specimens yesterday. The bat dried, but continued to hang in camp — responding viciously to Mexican teasings — until dusk when it showed some life and finally took

270±ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 4, 1938, continued.

off about one-half hour after sunset while it was still quite light — much lighter and earlier than at times seen and caught at water-tank. The mastiff bat flew at about "dove-speed" and seemed an excellent and graceful flyer. It could be heard squeaking sharply as it flew away. This squeaking was noted as they flew over the water-tank with a squeak about every second or less but with increased tempo as they dove down to water-surface — usually 3 or 4 dips down before touching water — and a loud squeak usually when stopped by the wire. These large bats, as well as the brown bats and Mexican-free-tails, are good swimmers moving rapidly over the surface in a crawling movement, similar to that of ground crawling. The smaller bats could often take off from the surface of the water if not hard hit by wire, and also they could climb the brick-wall of the water-tank; the mastiff bats could do neither.

All three of us worked on the bats; then broke camp and drove to:

Puerto Kino, Sonora. [=Bahia Kino]

Many grackles at Rancho de Costa Rica (at least two of which had yellow eyes as seen from few feet) with hundreds of doves (mourning doves, white-winged doves, Mexican ground-doves, and Inca doves) which come here to drink; we saw quail as we drove out from the ranch

[Bahia Kino] Puerto Kino, Sonora. May 4, 1938, continued.
toward P. Kino; ravens and turkey-vultures were
in flight; also yellow-headed black-birds.

Here at Bahia Kino looked up Señor Renando Comou whom Dr. Benson met when here two years ago; at that time there were only 8-10 shacks now there are that many dozen. It is the largest of the fishing villages we've visited on the Gulf. Señor Comou is a St. Marys (California) alumnus and the local big-game hunter. He claims to have shot about forty mt. sheep and to have guided Winthrop, Brisbane, and others ~~parties~~ on hunting parties. He told us of the former abundance of antelope and how it ~~easy~~ was to kill them by giving chase in an automobile —— said the antelope could run 50 m.p.h. easily; he said he chased one nine miles averaging over 40mph all the way. He confessed that they had been wiped out here due to this practice; now no antelope are to be found here.

May 5, 1938.

With aid of Señor Comou, who made arrangements for Dr. Benson's previous trip to Tiburon Island, a fishing boat ~~of~~ was contracted to take us to the island. We selected our equipment, trucked it to the beach from which it was doried to the small sailing-skiff. As there was ~~too~~ much wind to make the crossing an early morning start was arranged; so we camped on Señor Comou's doorstep instead of driving outside of the village as we did last night.

Bahia Kino, Sonora May 6, 1938.

Broke our "doorstep camp" at 4 am and went down to the beach prepared to embark for Tiburon Island; however, the fishermen decided the water was too rough for a crossing and went back to bed with the prophesy that the afternoon would be quieter.

Señor Comou took us fishing on our "free morning" off I. Pelicano. I caught one 90± and two 70± lb. sea-bass! We saw many waterbirds — 4000+ cormorants streaming across the water in irregular formation to circle around and around a feeding-spot (with many on water and the rest wheeling), hundreds of Heerman gulls, dozens of pelicans, a few petrels and duck-hawks, and a frigate bird. The I. Pelicano is a barren rock-hill with some sand-dunes at base; it is much lightened in color from the multitudinous droppings of the birds.

We came ashore early and found that the fisherman who was to take us to Tiburon Island decided that the fishing was too good to leave (truly they did begin to run after we had come in). Some difficulty experienced in getting back our first payment on passage as the fisherman stayed out late; so it was necessary to stay in the village for the night. We slept at Señor Comou's front-porch as last night.

Bahia Kino, Sonora.

May 7, 1938.

Broke "camp" and drove to:

50± ft., 3 mi. se. Punta Arena, 75 mi. w. Hermosillo, Sonora

Made camp about two hundred yards from Gulf shore with Tiburon Island just across the channel. Shot five lizards (312—316). Set out 50 mouse-traps on the rocky ground among creosote, torote, and ocotillo.

May 8, 1938.

Caught 6 Perognathus penicillatus (5♂ and 1♀; put up: ♂317-19; ♀320 no emb), nine Perognathus baileyi (3♂, 3♀, and 3 juveniles; put up: ♂321, 322; ♀323 no emb), two Dipodomys merriami (♂324, ♀325 no emb), and 1 Peromyscus eremicus. Cheek-pouch contents of pocket-mice saved. Shot and put up a Gambel's Quail: ♂326. (also shot a Cactus wren)

Put up mice and drove to:

500± ft., 2 mi. e. Punta Arenas, 75 mi. w. Hermosillo, Sonora

May 8, 1938, continued

Drove off road toward rocky hills over rough rocky terrain; made camp about ½ mile from hills being stopped by rough ground and washes. Set 50 mousetraps and 4 rat-traps on rocky, steep hillside among ocotillo, pitayo, creosote, torote, and bara blanca.

May 9, 1938.

Caught 6 Perognathus intermedius (327 as "skull only" for an Onychomys (probably) left only the head in trap;

500±ft., 2 mi. e. Punta Arenas, 75 mi. w. Hermosillo, Sonora.

May 9, 1938, continued.

♂ 328-330 and ♀ 331 (3 emb.), 8 Peromyscus eremicus (♂ 332), and two juvenile Neotoma albigula. Shot snake (333).

Broke camp and drove toward Punta Sargenta in hope of a ferry across the channel to Tiburon Island; however, we found that, contrary to information at Bahia Kino, the road did not go all the way to the point, but it stopped at a one-shack provision point for the fisherman. No one was there nor any boats in sight; so we back-tracked and drove to:

Hermosillo, Son.

650 ft., ~~Sierra Seri~~ Sierra Seri, 9 mi. w. Rancho San Javier, 70 mi. w.

May 9, 1938, continued.

Set 50 mousetraps on rocky-ground, rocky-hill among torote, creosote, palo verde, and ocotillo.

May 10, 1938.

Caught, 5 Perognathus intermedius (♂ 334, 335 and ♀ 336-38 no emb.), 1 Perognathus penicillatus (♂ 339), 1 Perognathus baileyi (♀ 340 no emb), and 2 Peromyscus eremicus (♂ 341, 342). Shot a lizard (343). Cheek-pouch contents of pocket-mice saved.

Broke camp and drove back to Rancho San Javier for a supply of water (slightly salty). On way back to same locality shot a round tail ground squirrel, Citellus tereticaudus (♀ 344 not emb.), at 4 mi. w. Rancho San Javier, 65 mi. w. Hermosillo, Sonora. Drove on in Sierra Seri to make camp at approximately the same place as yesterday:

650±ft., Sierra Seri, 9 mi. w. Rancho San Javier, 75 mi. w. Hermosillo, Son.

May 10, 1938, continued.

Set 50 mousetraps and 10 rat-traps (Schuylers) on rocky hill among torote, palo verde, creosote, ocotillo, and pitayo.

May 11, 1938.

Caught 12 Perognathus intermedius (5 ♂s and 7 ♀s; ♂ 345, 346 and ♀ 347 (4), 348 (5), 349 (no), 350 (no) (emb)), 5 Perognathus baileyi (♂ 2 and 3 ♀s: ♂ 351, 352 and ♀ 353 (no emb)), and 4 Neotoma albigula (3 ♂s and a juvenile; ♂ 354, 355, 356).

Broke camp late and drove toward Rancho Libertad, the type locality for Dipodomys deserti sonoriensis. By the bright moonlight hunted along road for mounds; however we were unsuccessful even at R. Libertad, but, when, both by chance and foresight, we parked off road to sleep, we found the rat-holes less than 10 ft. from the truck at:

300±ft., (Rancho Dolores), 7 mi. ese Rancho Libertad, Sonora.

Set out 10 Schuyler and 7 wooden rat-traps in sand at rat-holes (among mesquite trees).

May 12, 1938.

Caught 2 Perognathus penicillatus (♀ 357 (no emb)) and two Dipodomys deserti (♂ 358; ♀ 359 (no emb)). Cheek-pouch contents saved.

Broke camp and drove to Hermosillo where we picked-up mail, laundry, photographs, etc. A letter to Dr. Benson from Mr. Powell, vice-consul and acting-consul at Nogales, gave the information that we must return to Nogales and cross the U.S.-Mexico line in order to clear properly

Nogales-Hermosillo Highway, Sonora

May 12, 1938, continued.

the records of the Mexican migration office; so we proceed for Nogales. Slept beside road after driving until much after dark.

May 13, 1938

Drove into Nogales and went directly to the U.S. Consulate where Mr. Powell advised us to see the migration officials. The Jefe recieved us cordially and, when told of our dash to Nogales, said it had been unnecessary for us to return to Nogales until ready to cross the border for home. Dr. Benson returned to the U.S. Consulate and informed Mr. Powell of the results. Bought supplies and drove to:

2600± ft., 20 mi. s. Santa Ana, Sonora.

May 13, 1938, continued.

On rocky soil among grass and mesquite set by moonlight 10 Shuyler and 7 wooden rat-traps; also 50 live-traps.

May 14, 1938

Caught 12 Dipodomys spectabilis (3 ♂♂ with broken skulls; ♂ 360-362 and ♀ 363, 364, 365, 366, 367, 368; one ♀ moulting; ← no embryos →; cheek-pouch contents [illegible]), 2 Dipodomys merriami (one jv. and ♂ 369), and 3 Perognathus penicillatus (one jv. and ♂ 370, 371).

Broke camp and drove toward Hermosillo; made camp:

2100± ft., 45 mi. n. Hermosillo, Sonora.

Set out 50 mousetraps and 7 wooden rat-traps. Shot a Mountain Towhee.

2100± ft., 45 mi. n. Hermosillo, Sonora.

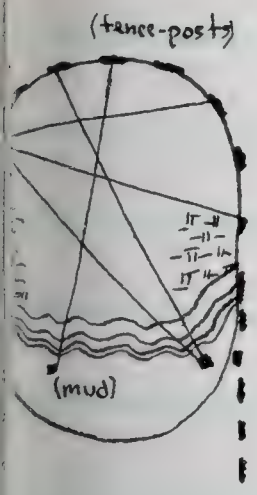
May 15, 1938

Caught in mousetraps and rat-traps set on tan-soil among grass, palo fierro, bara blanca, and mesquite: 13 Perognathus penicillatus (9♂ and 4♀: put up ♂372-75 and ♀376-379 no emb.), 1 Onychomys torridus (♂380), 3 Dipodomys spectabilis (2♂ and 1♀: ♂381; ♀382 no emb.), 5 Dipodomys merriami (2♀ and 3♂: ♂383-84). Cheek-pouch contents of pocket-mice and kangaroo rats saved. Put up Mountain Towhee (Pipilo fuscus mesoleucus) (♂385) shot yesterday, May 14, 1938.

Broke camp and drove thru Hermosillo to

925± ft., 1 mi. sw. Hermosillo, Sonora.

Made camp here at Rancho La Regional with permission of operators to trap. While Dr. Benson and Señor Delgadillo set out gopher traps, I made a bat-trap at a 35 ft-diameter water-pond — using the Borell method by stretching wires close to the surface. The trap was ~~very~~ entirely satisfactory; however, there were very few bats. A dozen or so pipistrels skimmed the water, and three of them ticked the wire — none falling. Later two or three larger bats appeared; one was taken, a Mexican free-tail. This small catch is no reflection upon the effectiveness of the Borell-bat-trap, but that the region has many potential watering places for bats, eg, irrigation ditches, ponds, and the Rio Sonora. (cf., Costa Rica Ranch, May 1-4, 1938 pp. 66-70.



May 16, 1938.

Put up my bat, Tadarida mexicana (♂386 May 15, 1938). Then

925±ft., 1 mi. sw. Hermosillo, Sonora.

May 16, 1938, continued.

made seven sets with ten gopher-traps along banks of irrigation ditches running thru orange-orchard where vegetables and wheat grow between some of the rows. Caught one young Thomomys bottae winthropi (topotype) (♂ 387; cheek-pouch contents saved). Set out 50 mousetraps along irrigation-ditch banks and in field of green wheat.

May 17, 1938.

In mousetraps caught only the tail of a house-mouse and a Chat (tore the bird to pieces trying to put it up). Señor Delgadillo did better with his 50 traps: a house-mouse and a pocket-mouse. The practice of flooding the field here probably accounts for the scarcity of mice. Caught another small Thomomys bottae winthropi, but did not save it. Caught two frogs in irrigation ditches of ranch (388, 389).

There are many (kinds and individuals) birds here: turkey vultures, ravens, night-hawks, Gila wood peckers, Grackles (five seen within a few feet to have yellow eyes), a black-and white kingfisher, chats, doves (very many Mourning doves, some White-winged, Inca, and Mexican Ground doves), swallows, hummers, vermillion fly catchers, English Sparrows, linnets.

Broke camp and drove to Hermosillo for supplies and water; had lunch, wrote letters, and drove to.

1150±ft, San José de Gracia, 20 mi. NE. Hermosillo, Sonora.

Made camp beside brook. Set out mousetraps in wheat-field (stubble) border by mesquite and heavy brush.

1150±ft., San José de Gracia, 20 mi. NE. Hermosillo, Sonora.

May 18, 1938.

Tho the trapline was very similar to the ones at Costa Rica Ranch, and it was hoped that Perognathus flavus and some Reithrodontomys might be taken as at that Ranch; however, the trap-line yielded not one mouse. The ants had eaten most of the bait in about half the traps, but that doesn't account for the zero catch. The field was river-bottom land and is, of course, subject to periodic flooding; however, similar conditions existed at Costa Rica Ranch. Señor Delgadillo set at border of this field and caught only 3: 2 pocket-mice and a kangaroo rat.

Broke camp and drove: to Gavilan to Guadelupe to Ures to La Pitaya to Bamuco to Alamos to a ranch, La Estancia, and made camp:

2150±ft., La Estancia, 6 mi. N. Nacori, Sonora.

May 18, 1938, continued.

Set 44 mousetraps on grassy hill among trees, brush, and granite outcrops; set 50 live-traps around border of wheat-field which was bordered by mesquite, grass, and brush. These 50 live-traps were set between the 50 mousetraps here set out by Dr. Benson — mousetraps vs. live-traps again.

By the field-bordering, brush-stacked, barbed-wire fence I noticed three sharpened sticks stuck in ground and pointing (at an acute angle off vertical) toward the top of the fence. One of the ranch boys confirmed suspicions that the sticks were set there as a deer trap — claimed to have

2150 ft, La Estancia, 6 mi. N. Nacori, Sonora.

May 18, 1938, continued.

so bagged two or three deer there. The points of the sticks are fire-hardened before sharpening.

May 19, 1938.

In mousetraps on hill caught 1 Liomys pictus (♀ no emb 390) and 3 Perognathus penicillatus (2 ♂♂ and 1 ♀; badly eaten by ants, not saved). In the live-traps 1 Perognathus penicillatus and 1 Peromyscus eremicus (both turned loose); however, Dr. Benson's mousetraps which alternated with these live-traps caught 3 Onychomys torridus and 6 Peromyscus eremicus: 9 for the mousetraps and 2 for the live-traps set on the same trap-line. Only at Costa Rica Ranch have the live-traps ever approached the effectiveness of the mousetraps; however, at Costa Rica in a stubble wheat-field we caught [redacted] small mice in the live-traps: Perognathus flavus and Reithrodontomys sp. The effectiveness of the live-traps is restricted to special habitats and seems selective enough for small mice. The live-traps are advantageous in that they are easily and quickly set out, and the mice may be kept ~~fast~~ transported safely and easily in them.

The three sticks in the wheat-field as mentioned above killed a young-buck white-tailed deer. The only apparent injury was on the throat where a stick had pierced. We bought the skin and skull for a specimen and heart, liver, a shoulder, and a ham for food. Dr. Benson

2150± ft., La Estancia, 6 mi. N. Nacori, Sonora.

May 19, 1938, continued.

and I spent much time before and after putting up the mice cleaning and preparing the deer. Then I left early for the mountains 3± miles to the west at:

2400± ft., Sierra de Mazatan (E. slope), 6 mi. N. Nacori, Sonora.

Set 44 mousetraps high on slope among granite-boulders and grass in heavy brush and trees. I don't know the plants here at all; most of the brush is in "dead" state without leaves and brown-black color (a few pitayos and cholla).

Returning camp-ward at dusk shot a cottontail rabbit (♀ 2 emb 392) and later, after dark (45± min. after dark), a ~~Elasmotatal~~ Saw-whet ~~Screech~~ Owl (♂ 391) which was in a small tree with a pair of roosting White-winged Doves — the trio within a six-foot-diameter circle. I shot the little owl from about 10 ft. with a half-load .38 which did not kill him outright; when I squeezed his breast to put him out ~~after~~ chasing him thru the brush for 20 ft., he dug vigorously at my hands with his talons until dispatched. Both rabbit and owl at 2250± ft. on east slope.

May 20, 1938

Caught on the mountain 3 Perognathous penicillatus (♂ 393, ♀ 4 emb 394, ♀ 3 emb 395), and six Peromyscus eremicus (4 (2♂ + 2 jv. discarded; put up: ♂ 396, 397, and ♀ no emb. 398. Picked up the skull only of a white-tailed deer (399) on the mountain side; the carcass was post-rotten old and so scattered that age and sex could not be told with certainty. On the way to the trap-line caught a brief sight of a deer in the very dense "jungle" brush or

2400± ft., Sierra de Mozatan (E. slope), 6 mi. N. Nacori, Sonora.

May 20, 1938, continued.

undergrowth-tree forest that densely covers the foothills and the mountain. To avoid this said jungle which made for very difficult and slow walking I skirted the hills by detouring to the south. In grass (dry-yellow) glade was surprised by three (one large, a medium, and a small) antlerless white-tailed deer which were temporarily unmoved (literally and figuratively) by my presence: [redacted] lbs+. 75 lbs+. 50 lbs±. However, my short stop and sudden bringing-to-shoulder of my shotgun started them moving fast — almost as fast as, after ~~my too~~ rapid, "buck-fever" engendered shots (3). Tho the shots were running-brush shots and very difficult, the deer could have been taken with proper approach with the shot-gun (loaded with buckshot 18 and single ball) as the animals were within 75 yards of the "hunter". No more deer were seen.

In a valley between the last foothill and the east slope of the base of the Sierra de Mozata in area at least 1/2 by 1/4 miles the <u>white-winged doves</u> are paired up by the hundreds — the continuous and multitudinous cooing throbs in your ears in the valley and from a distance the area-specificity and intensity of the sound compares somewhat to the full-blossomed choruses of a fresh-water marsh heard from a distance. I saw no mourning Doves here at all.

Rancho La Estancia to Rancho Banachari, Sonora.

May 20, 1938, continued.

Broke camp at La Estancia and drove 6 miles to Nacori, 7.4 miles to Matape, and 11.1 miles more to make camp at:

2700±ft., Rancho Banachari, 10 mi. N. Matape, Sonora.

May 20, 1938, continued.

Set 44 mousetraps on rocky-soil hill among very light brush and very short (30-40 mm) grass. At the ranch we made another Borell-bat-trap by stretching wires close to the surface of an 8 ft. square (and 1 yd.+ deep) rock-cement water tank. Señor Delgadillo caught most of the bats while Dr. Benson and I were looking for bats at an abandon house and after we had retired. The bats* were put in cloth-bags as before for safe-keeping until morning.

May 21, 1938.

In mousetraps caught 2 Perognathus bailey: (♂409, no emb ♀405), 1 Peromyscus eremicus (♂406), and Onychomys torridus (♂407). Put up Antrozous pallidus (♂400, ♂401, 2 emb ♀402, no emb ♀403) (* also Sac-winged Bat and Myotis yumanensis taken) (NB: bats taken last night, May 20, 1938).

Put up specimens, broke camp, and drove 37.9 miles to San Pedro and 3.4 miles beyond and camped at:

1400±ft., 1 mi. N. Batuc, Rio Moctezuma, Sonora

May 21, 1938, continued.

Put out 44 mousetraps on rocky hill-side* and hill-top in light brush and very short grass. (* above arroyo).

1400± ft., 1 mi. N. Batuc, Rio Moctezuma, Sonora.

May 22, 1938.

Caught in mousetraps 1 Perognathus goldmani (♂408), 4 Perognathus penicillatus (♂409–411), and one jv. Dipodomys merriami (not saved).

Put up specimens, broke camp, and drove 2.4 miles thru Batuc, 4.2 miles to Tepupa, 1.5 miles to Suaqui, round-trip to Tepupa to Suaqui, and 7.7 miles to camp near Rancho El Ojito:

1400± ft., El Ojito, 6 mi. NE. Suaqui, Sonora.

May 22, 1938, continued.

Made camp at roadside in arroyo between steep cliffs of red rock. Set 44 mousetraps along on steep sides of red-rock cliff. Shot a lizard (#12) in wash and 3 Gambel's Quail (saved 2 crops).

May 23, 1938.

Caught in mousetraps only 1 Perognathus goldmani (♀413; no emb. check-pouch contents saved) and 2 Peromyscus eremicus (♀414, 2 emb., ♀415, no emb.).

Broke camp and drove toward Moctezuma (lost 4.8 miles by dropping bags when rear-door of truck sprung open) over rough, rocky, steep mt. roads from El Ojito: 12.6 miles to Rancheria (no water), 3.9 miles to El Salto (here we got water extremely polluted by cattle manure), 16.5 miles to:

Tepachi, Sonora

May 23, 1938, continued.

Here stopped at almost dry mountain stream for

Tepachi, Sonora.

May 23, 1938, continued.

water. In pool (less than 3 ft. sq.) collected 20 minnows which I catalogued (416).

Drove on 8.2 miles to Divisadero, 3.1 miles to La Noria, and 5.7 miles more to make camp in arroyo near dark-lava hills:

2550± ft., lava bed, 19 mi. SE Moctezuma, Sonora.

May 23, 1938, continued.

Set out 44 mousetraps and 17 rat-traps on sides (in thick brush) and top (light brush) of dark-lava hill and 50 live-traps in arroyo: wash and its banks.

May 24, 1938.

Caught on side of lava hill in thick brush 4 Perognathus goldmani (♂ 418, ♂ jv 419, ♀ 420 (no emb), ♀ 421 (no emb); cheek-pouch contents saved), 4 Peromyscus eremicus (♂ 422, ♀ 423 (no emb), ♀ 424 (3 emb), ♀ 425 (3 emb) (moulting), and 1 Neotoma albigula (♀ jv. 426; black pelage); on hill-top in light brush 1 Perognathus baileyi (♀ 417 (no emb); cheek-pouch contents saved) and 2 Peromyscus eremicus (not saved); in live-traps in the arroyo 5 Perognathus penicillatus (not saved) and 1 Perognathus baileyi (♀ 430 which gave birth to two young (427, 428) in the live-trap and one later in a packing box (429).

Set 17 rat-traps on side of ~~rocky~~ lava hill and 50 live-traps on top; set 44 mousetraps on rocky hill (not lava but light brown rock) near the lava hill with a heavy mesquite arroyo between the hills.

Shot two Gambel's Quail for table; crops empty.

2550±ft., lava bed, 19 mi. SE Moctezuma, Sonora.

May 25, 1938.

Caught on dark lava hill-side in dense brush one Peromyscus eremicus (not saved) and 1 Perognathus goldmani (♀431 no emb); on lava hill-top in light brush one juvenile Perognathus bailey (♂433, v); on tan rocks near lava hill 2 Perognathus penicillatus (♂434, ♂435, ♀436 no emb, ♀437 no emb), one Perognathus bailey (♂432), and one Peromyscus eremicus (not saved).

Broke camp and drove 8.4 miles to Rancho Garumbullo where we bathed and then drove 10.9 miles to Moctezuma where we picked up mail and supplies. Drove down dry-bed of Rio Moctezuma to:

2300±ft., 1 mi. S. Moctezuma, Sonora.

May 25, 1938, continued.

Made camp beside wheat-field and few hundred yards from dark lava hill where set 10 rat-traps and 43 mouse-traps in rocks and brush and then after dark 50 live-traps in wheatfield.

May 26, 1938.

Caught on lava hill 2 Perognathus goldmani (♂438, ♂439) and 6 Peromyscus eremicus (♂440, ♂441); in live-trap in wheat-field one Perognathus penicillatus (♂442). Catalogued a lizard (443) brought in for pay (5-10 centavos) by Mexican boy, one of several hired 2 years ago by Dr. Benson to hunt lizards and frogs.

Set 9 gopher traps in wheatfield and melon-patch. Caught one juvenile Thomomys umbrinus:

2300±ft, 1 mi. S. Moctezuma, Sonora.

May 26, 1938, continued

(jv. #444 as skull only); this gopher take between edge of wheatfield and irrigation ditch. The river-bottom (Rio Moctezuma) land is here planted to wheat, melons, and sorghum, mainly, to the base of the east cliff-bank of dark lava (where mouse and rat traps set) and cut by many irrigation ditches which served to flood and ditch-irrigate the fields. An old (still in use) sorghum mill stands at the base of the lava-conglomerate cliff. Probably the lava did not cross the river in its flow as the cliff shows only coaring and slides of dark lava whereas the the mesa-top is mostly lava rock and very dark brown (lava?) soil with some few patches of conglomerate near the edge of the bank-cliff. Thick brush grows on the cliff-slope and parts of the mesa-top where, however, it is mostly less dense brush (ie, 1-4 bushes/100 sq ft).

Set 50 live-traps from sorghum mill along irrigation ditch between wheat-fields and base of lava cliff; set 11 rat-traps in black lava rocks on slope of cliff along same trap-line as last-night's rat-line on which no rats taken but much sign apparent; set 43 mousetraps on mesa-top in black-lava rocks and dark brown soil; reset 9 gopher traps.

May 27, 1938.

In the live traps set at edge of wheatfields caught nothing; in the rat-traps in black lava rocks on cliff-slope caught only one Peromyscus eremicus (not saved);

2300± ft., 1 mi. S. Moctezuma, Sonora.

May 27, 1938, continued.

In the mousetraps on mesa-top caught two Perognathus penicillatus (♀445 (2 emb.); ♂446 as skeleton only), 3 Perognathus baileyi (one juvenile; ♂447, ♀448 (no emb.)), and 7 Peromyscus eremicus (saved: ♂449, ♂450); in gopher traps only one Thomomys umbrinus (♀451 (no emb) as skull only).

Put up specimens, broke camp and drove to Moctezuma for water then 12.7 miles to Jecori, 4.1 miles to Nueve Colonia, 0.7 miles to Cumpas, 10.9 miles to Los Hoyos, 3.2 miles to La Noria where we took the better but wrong road which lead to Nacozari and thereby lost only 2.8 miles, from La Noria 8.6 miles to Alvaro Obregon, 4.0 miles more to make camp in:

3400± ft., Arroyo Santa Rosa, 28 mi. N. Cumpas, Sonora.

May 27, 1938, continued.

Here at dusk set 41 mousetraps on rocky, almost-bare hill above the wash which is cliff-sided on the east and west — the latter side with occasional steep hillside rather than cliff. Black walnut trees (1–2½ ft. dia), mesquite, and brush grow at edges of arroyo but only a few "dead", black-brushes, ocotillo, and cholla on hillside above (where traps set). Saw a cottontail as we drove up side of wash to campsite (very near former campsite of Dr. Benson and Señor Delgadillo when here 2 yrs. ago). Gambel's Quail, Mourning and white-winged doves, and Phainopepla seen; heard cardinals.

3400±ft., Arroyo Santa Rosa, 28 mi. N. Cumpas, Sonora.

May 28, 1938

Caught in mousetraps on the rocky hill one Perognathus goldmani (♂452; very much eaten by ants), 2 Perognathus bailey: (♀453 3 emb; ♀454 no emb), and 9 Peromyscus eremicus (4 juveniles and one ant-fodder plus: ♂455; ♀456 3 emb; ♀457 3 emb; ♀458). Cheek-pouch contents of pocket-mice saved.

Broke camp and drove over the continuing (since Moctezuma) difficult (rocky; rough; very steep in places) roads 1.2 miles to Rancho Santa Rosa, 17.7 miles to Bacoachic, and 41.6 miles more to Cananea where we bought a few supplies and drove on toward Santa Cruz — sunset near and area promising 16.1 miles from Cananae; so made camp at:

4700± ft., La Sauceda, 15 mi. NNE. Cananae, Sonora.

Set 16 rat-traps for kangaroo-rats in rolling grassland (over-grazed) between river-bed and sierras. Dozens of the rat mounds could be seen in this grassland where there is very little to cut off view for miles — only occasional bush with few trees and tall grass near the wash.

May 29, 1938.

Caught in rat traps only 3 Dipodomys spectabilis (one juvenile and ♀459 2 emb., ♀460 2 emb; the embryos of the ♀460 measured 60 mm; cheek-pouch contents saved.

Here using Schuyler and wooden rat-traps at mound sites resulted in much poorer catch than at Santa Ana (May 14, 1938) where I caught in the

4700± ft., La Sauceda, 15 mi. NNE. Cananea, Sonora.

May 29, 1938, continued.

Schuylers ten rats for ten traps (but only 2 out of 7 in wooden rat-traps). The only difference between the settings technique in these two places was the lack of alpiste ("bird-seed") to mix with oat bait and "chum" (ie, spreading some bait around trap). The lack of this additional bait may not account for the difference of 12 and 3 rats, but, I believe, it is probable a noteworthy factor. Señor Delgadillo caught five rats here in 17 traps using the last small bit of alpiste (some of which I took from the cheek-pouches of his specimens this morning); however, his catch at Santa Ana was small and at Banori (April 25, 1938) was zero; so I can not see but that the alpiste is a valuable asset for trapping D. spectabilis as it has been seen for other rodents here in Sonora this spring.

Broke camp and drove 34.0 miles to Zorrilla, a railroad crossing and flag-stop for train and 6.2 mi. more to Santa Cruz for meal. While eating we could hear and see partly the horse-race of the citizenry down the main-street. Drove 2.3 miles out of town to make camp at Rio Santa Cruz:

4650± ft., 2.3 mi. S. Santa Cruz, Sonora. May 29, 1938, continued.

Set out 41 mousetraps in river bottom between cultivated fields and willow-brush also 50 livetraps between (and in) willow-brush and the river channel.

4650±ft., 2.3 mi. S. Santa Cruz, Sonora.

May 30, 1938.

Caught one *Peromyscus leucopus* (♂ 461) in willow-brush also another there in live-trap, but it was turned loose. Broke camp for:

Nogales, Sonora to Berkeley, California.

Enroute ran out of gasoline twice but arrived in the afternoon to find that the American custom-house was closed for Memorial Day observance, and our passage could not be arranged until the next morning. Left the truck (lights burned out due to short circuit) at Mexican border-office and spent night on Mexican side in hotel.

May 31, 1938

Crossed border with no trouble from Mexican officials (ordinarily much the same ~~some~~ red-tape that held us put in going into Mexico, but Señor Bonarand of the Pacific Brokerage Company "said the right thing to the right man") and were passed quickly enough by the US customs.

Drove to Tuscon where truck was repaired; then drove on until after dark — slept near roadside.

June 1, 1938

Drove all day into night to La Crescenta, California where we spent night at the home of Dr. Benson's sister.

June 2, 1938.

Drove all day without event and arrived in Alameda at dusk; Dr. Benson left me there for Berkeley.

J E Simpson,
1938.

Species Accounts

March 17 to May 30, 1938.

Myotis californicus

<u>775± ft, Tinajos de los Papagos, Sierra del Pinacate, Sonora</u>

March 22, 1938

Shot ♀53 (no emb.) at dusk along wash that runs thru the tanks where bats come to drink. (also 3 <u>Pipistrellus hesperus</u>, ♂54, ♂55, ♂56).

Pipistrellus hesperus

<u>2750± ft., Tinajas de los Papagos, Sierra del Pinacate, Sonora.</u>

March 22, 1938

Shot 3 (♂ 54, ♂ 55, ♂ 56) at dusk along wash that runs thru the tanks where bats come to drink. (also 1 <u>Myotis californicus</u>, ♀ 53).

JESimpson,
1938.

Eptesicus fuscus

2700 ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 1, 1938.

At water-tank with Dr. Benson caught two; put up one: ♀282 (no emb.). Cf. general account, pp. 66-70 of May 1-4, 1938.

May 2, 1938.

At water-tank with Dr. Benson and Señor Delgadillo caught nine; put up ~~none~~ 9 ♂♂ 300-303, 306-7, and ♀304, 305, 308 (no emb.). Cf. as above.

May 3, 1938.

At water-tank with Dr. Benson and Señor Delgadillo caught three; none were kept. (Cf. as above).

JE Simpson,
1938.

Antrozous pallidus

2700± ft., Rancho Banachari, 10 mi. N. Matape, Sonora.

May 20, 1938.

With Dr. Benson and Señor Delgadillo four bats (♂400, ♂401; ♀402, ♀403) taken in Borell-bat-trap at water-tank (cf. General Account, p. 83, May 20, 1938.)

2 emb. no emb.

JESimpson,
1938.

Tadarida mexicana

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 1, 1938.

At water-tank with Dr. Benson caught six; put up 3: 0→283-85. Cf. General account, pp. 66-70 of May 1-4, 1938.

May 2, 1938.

At water-tank with Dr. Benson and Señor Delgadillo caught sixteen; none were put up. Cf. as above.

May 3, 1938.

At water-tank with Dr. Benson and Señor Delgadillo caught eight; none were put up. Cf. as above.

925± ft., 1 mi. SW. Hermosillo, Sonora.

May 15, 1938.

At watering-pond by Borell - ~~bat trap~~ method; this was only bat taken — contrasting Costa Rica Ranch trap. (cf p. 77.).

J.E. Simpson,
1938.

Eumops perotis

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 1, 1938.

At water-tank with Dr. Benson caught three; put up one: ♂ 281. Cf. general account, pp. 66–70 of May 1–4, 1938.

May 2, 1938.

At water-tank with Dr. Benson and Señor Delgadillo caught ~~sixteen~~ 8: three as skeletons only: ♂ 309, 310 and ♀ 311. ~~; none were put up~~. Cf. as above. no amb.

May 3, 1938.

At water-tank with Dr. Benson and Señor Delgadillo caught one; turned it loose. Cf. as above. The bats smelled of a strong sweet odor presumably coming from a gland on throat where odor was most (nauseating) powerful.

JESimpson,
1938.

Procyon lotor

50±ft., Punta Peñasca, Sonora

April 2, 1938.

Dr. Benson and I found a raccoon skull (5013, SBB.) and part of skeleton in sand between beach and lava hill.

JESimpson,
1938.

Canis latrans

775± ft., Tinajas de los Papagos, Sierra del Pinacate, Sonora.

March 24, 1938.

Cataloqued a skull picked up by Señor Delgadillo in the rocks. Coyote sign is common. The subspecies is probably C. l. mearnsi.

JESimpson, 1938

Vulpes macrotis

4 mi. se White Water, Riverside Co., California

March 11, 1938

On U.S. Highway 99 at 930 pm a kit-fox bounded across the road in full view in the head light beam. First thought to be a feral cat, but its large ears and brush stood out in darkness before it came into light beam.

JESimpson, 1938

Citellus tereticaudus

1500± ft., 43.5 mi. w. Magdalena, Sonora. March 19, 1938

Along road in sand Dr. Benson, shot a round-tailed ground-squirrel out of a mesquite-tree (many mesquite here). I catalogued it (♂43), and Señor Delgadillo put it up.

1400± ft., 1 mi. ne. Sonoita, Sonora.

April 9, 1938.

♂138 taken by Señor Delgadillo among dense mesquite near Rio Sonoita.

925± ft.; 1 mi. s. Caborca, Sonora.

April 15, 1938.

♀168 caught by Senor Delgadillo among dense mesquite near Rio Altar.

500± ft., Sierra Seri, 4 mi. W. Rancho San Javier, 20 mi. W. Hermosillo, Sonora

May 10, 1938.

no emb.
♀344 shot along road thru torote, ocotillo, palo verde, and creosote.

JESimpson, 1938

Citellus grammurus

1100± ft., Cerro Cañedo, 2 mi. e. Caborca, Sonora.

April 16, 1938.

♀183 (no emb.) shot high up on rock-hill among creosote, ocotillo, small palo verde, and nopal. Another squirrel was with it but ran into rock-crevise. A third seen at base of hill on bank of Rio Altar in heavy brush.

JESimpson, 1938

Ammospermophilus harrisii

JESimpson,
1938.

Thomomys bottae

925± ft., 1 mi. SW. Hermosillo, Sonora.

May 16, 1937.

♂ 387 caught on irrigation-ditch bank in orange-orchard. Cheek-pouch contents saved. This is a young topotype of T. b. winthropi.

May 17, 1937

Another young gopher in same trapline of 7 sets with 10 Macabee gopher-traps. Not put up; cheek-pouches ~~contents~~ empty.

JESimpson,
1938.

Thomomys umbrinus

2300± ft., 1 mi. S. Montezuma, Sonoma.

May 26, 1938.

skull only.
♀ 444 jv. taken in wheat-field of river-bottom land — surrounding field cultivated to edge of lava hill.

May 27, 1938.

noemb; skull only.
♀ 451 taken in wheat-field as above.

JESimpson,
1938.

Liomys pictus

2150± ft., La Estancia, 6 mi. N. Nacori, Sonora.

May 19, 1938.

no emb.
♀ 390 taken in mousetrap beside brush-fence (which surrounds wheat-field) on grassy hill among trees and granite out-crops.

JESimpson,
1938.

Perognathus flavus

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938.

Topotypes of P. f. sonoriensis Goldman taken in wheat-field next to corn-field and bordered by mesquite: six: ♂ 269, 286, 287 and ♀ 288 (no emb.), 289, 290. ♀ 288 and ♀ 289 were moulting. These are only topotypes known; only the type specimen constituting the type-series.

May 3, 1938.

Six more topotypes of P. f. sonoriensis taken in corn and wheat-fields as above: ♂ 291–94; ♀ 296-97 (6 emb.; no emb.). ♀ 296 was moulting.

J.E. Simpson, 1938.

Perognathus longimembris

50± ft., Punta Peñasca, Sonora. April 1, 1938.

♂102 and ♂103 in sand on lee-side of lava hill among creosote and white succulents.

50± ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora

April 6, 1938.

♀129 and one other (which was eaten almost to nothing; probably by Onychomys torridus) taken in sand-dunes among scrub-grass and some creosote. Cheek-pouch contents were saved.

900± ft., 1.6 mi. sw Las Alesnas, 20 mi. wsw Caborca, Sonora.

April 19, 1938.

♂194 caught in live-trap in open area of creosote in sand; cheek-pouches empty.

20± ft., Puerto Lobos, Sonora.

April 21, 1938

♀215 (no emb.) caught among sand-brush, torote, and cholla on sand dunes.

200± ft., 3 mi. n. Puerto de Lobos, Sonora.

April 22, 1938

♂230 and ♀231 (no emb.) caught among white-brush on sand dunes.

20± ft., Punta Cirio, 5 mi. s. Puerto Libertad, Sonora.

April 28, 1938.

♀252, 253, 254 (no emb.) taken among bunch-grass and occasional torote on sand dunes. Cheek-pouches empty.

JESimpson
1938.

Perognathus amplus

1900± ft., 16.7 mi. sw. Bamori, Sonora.

April 25, 1938.

♂ 239 caught among creosote, palo verde, palo fierro, and saquero on rocky gravel-soil. Some doubt exists now as to the true species of this mouse.

JCSimpson
1938

Perognathus baileyi

2650 ft., La Misión, 2 mi. w. Magdalena, Sonora

March 17, 1938

One taken in mousetrap on rocky hill-top in cholla (low group) (♂37). The pouches contained small, green seeds, bits of woody mass, and some dark, dry, vegatable material (saved).

March 18, 1938

Two (♂41, ♂42) taken in mousetraps on rocky hillside among cholla and ochotillo.

1100± ft., Crater Elegante, 34 mi. w. Sonoita, Sonora

March 29, 1938

On rim (rock and cinders; grey lava) of crater among ochotillo and creosote ♂89 taken; cheek-pouch contents saved.

1775± ft., 8 mi. s. San Luis, 34 mi. nw. Caborca, Sonora.

April 13, 1938.

♂158 taken among heavy vegetation of palo verde, creosote, ocotillo, saguero, pitayo, nopal, and barrel-cactus. Cheek-pouch contents saved.

1900± ft., 16.7 mi. sw. Bamori, Sonora.

April 25, 1938.

♂240 taken among creosote, palo verde, palo fierro, and saguero on rocky, gravel-soil. Cheek-pouch contents saved.

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938.

Four (2♂'s not put up; ♀ 277 (3 emb.), 278 (no emb.)) taken in wheat-field bordered by corn-field and mesquite.

Perognathus baileyi (continued).

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 3, 1938.

Three (2 put up: ♂298, ♀299 no emb.) taken in cornfield bordered by wheat-field and mesquite.

50± ft., 3 mi. SE. Punta Arenas, 75 mi. W. Hermosillo, Sonora.

May 8, 1938

Nine (3♂, 3♀, and 3 juveniles) (♂321, 322; ♀323 no emb.) taken on rocky ground among creosote, torote, and ocotillo. Cheek-pouch contents saved.

650± ft., Sierra San, 9 mi. W. Rancho San Javier, 70 mi. W. Hermosillo, Sonora

May 10, 1938.

♀340 no emb. taken on rocky hill among torote, creosote, palo verde, and ocotillo.

May 11, 1938.

Five (2♂ and 3♀: ♂351, 352 and ♀353 no emb.) taken on a rocky hill as above.

2700± ft., Rancho Banachari, 10 mi. N. Matape, Sonora.

May 21, 1938.

♂404 and ♀405 no emb. taken in very short grass and light brush on rocky hill.

2550± ft., lava bed, ~~mi. Moctezuma, Sonora~~.

May 24, 1938.

♀417 no emb. taken on top dark lava hill in light brush. Cheek-pouch contents saved.

♀430 taken in arroyo near dark lava bed (300-400 yds distance); this female gave birth to two young (427, 428) in the live-trap in which it was

Peroqnathus baileyi (continued)

2550± ft., near lava bed, mi. Moctezuma, Sonora

May 24, 1938, continued.

caught and later to another (429) in a packing-box in which it was temporarily kept. The young were shrouded in very loose red-pink skin with no hair visible; the eyes and ears were completely closed, but the mouth was open. The young responded to handling with squirms and squeeks.

May 25, 1938

♂433 juvenile taken on top dark lava hill in light brush, black rocks, and dark brown soil in live-trap.

♂432 taken on tan rocky hill above arroyo a few hundred yards from the dark lava hill.

2300± ft., 1 mi. S. Moctezuma, Sonora.

May 27, 1938.

Three (one juvenile and ♂447, ♀448 no emb.) caught on hill-top in dark lava, dark brown soil, and light brush.

3400± ft., Arroyo Santa Rosa, 28 mi. N. Cumpas, Sonora.

May 28, 1938.

♀453 3 emb. and ♀454 no emb. taken on rocky hill above arroyo among few plants: ocotillo, cholla, "dead" brush. Cheek-pouch contents saved.

J.E. Simpson
1938

Perognathus penicillatus

2650 ft., La Misión, 2 mi. w. Magdalena, Sonora

March 17, 1938

(36♂)
One taken in mousetrap in rock-sand wash.

850± ft., Paso McDougal, Pinacate Region, Sonora

March 25, 1938

♂72 in sand and bunch-grass near east base of Sierra Hornaday; cheek-pouch contents saved.

900± ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora

March 27, 1938.

Two (no emb. ♀78, ♂79) along banks of large wash among palo verde, ironwood, mesquite, and soft succulents.

925± ft., 1 mi. e. Caborca, Sonora

April 15, 1938

Six ♂'s (♂165, 166, 167) taken in dense mesquite near Rio Altar; cheek-pouch contents saved.

900± ft., 16 mi. sw. Las Alesnas, 20 mi. wsw. Caborca, Sonora.

April 18, 1938.

♂186 caught among creosote in sand; cheek-pouch contents saved.

April 19, 1938.

10 caught among creosote on sand; 7 put up: ♂'s: 195-199 and ♀'s 200-201; cheek-pouch contents saved. Three of six taken in live-traps turned loose (3♂'s).

900± ft., 13 mi. sw. Caborca, Sonora

April 23, 1938.

Seven (5♂'s and 2♀'s) taken among grass, palo verde, creosote, and cholla. Cheek-pouch contents (but not mica) saved.

Perognathus penicillatus (continued)

650± ft., 11.3 mi. w. Hermosillo, Sonora.

May 1, 1938.

Twelve (3 in live-traps; put up ♂ 263-67; cheek-pouch contents saved.) taken on tan, sandy soil among dry grass, palo verde, palo fierro, and mesquite. Many of the ♂ had expanded testes.

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938.

One ♂ taken in wheat field bordered by corn-field and mesquite (not saved). Dr. Benson took many at border of field near mesquite in soft ground.

May 3, 1938.

One ♂ taken in live-trap in corn-field bordered by wheat-field and mesquite. This pocket-mouse was found dead in the live-traps, bloody and battered; perhaps it killed itself trying to escape — the cold of the night would help.

50± ft., 3 mi. se. Punta Arena, 75 mi. w. Hermosillo, Sonora.

May 8, 1938.

Six (5 ♂ and 1 ♀; ♂ 317-319; ♀ 320 no emb.) caught on rocky ground among creosote, tarote, and ocotilla. Cheek-pouch contents saved.

650± ft., Sierra Seri, 9 mi. w. Rancho San Javier, 70 mi. w. Hermosillo, Sonora.

May 10, 1938.

♂ 339 taken in small wash on rocky hill among tarota, creosote, palo verde, and ocotillo.

Perognathus penicillatus (continued).

300± ft., 7 mi. ESE Rancho Libertad, Sonora. May 12, 1938.

Two ♀ (♀357 no emb.) taken on sand among mesquite.

2600± ft., 20 mi. S. Santa Ana, Sonora.

May 14, 1938.

One juvenile and ♂ 370, 371 taken in live-traps on rocky soil among grass and mesquite.

2100± ft., 45 mi. N. Hermosillo, Sonora

May 15, 1938.

Thirteen (9 ♂ and 4 ♀: ♂ 372-75; ♀ 376-79 no emb.) taken on tan-soil among grass, palo fierro, bara blanca, and mesquite. Cheek-pouch contents saved.

2150± ft., La Estancia, 6 mi. N. Nacori, Sonora.

May 19, 1938.

Three taken on grassy hill among trees and granite out-crops; not saved as ants had eaten them up.

One in live-trap set at edge of wheat-field — turned loose.

2400± ft., Sierra de Mazatan, 6 mi. N. Nacori, Sonora.

May 20, 1938.

Three (♂ 393, ♀ 394 4 emb., ♀ 395 3 emb.) taken on east slope of mountain among granite boulders in grass, heavy brush, and trees.

1400± ft., 1 mi. N. Batuc, Rio Moctezuma, Sonora.

May 22, 1938.

Four (♂ 409-411) taken in short grass and light brush on rocky slope above arroyo.

Perognathus penicillatus (continued)

2550±ft., near lava bed, mi. Moctezuma, Sonora.

May 24, 1938

Five taken in live-traps in arroyo and its banks in tan rocks and light brush (not saved).

May 25, 1938

Seven (♂439, ♂435, ♀436 no amb, ♀437 no amb) taken on tan-rocky hill in light brush above arroyo a few hundred yards from dark lava hill.

2350±ft., 1 mi. S. Moctezuma, Sonora.

May 26, 1938.

♂442 taken in wheat-field near dark lava hill.

May 27, 1938.

On hill-top in dark lava and light brush in dark brown soil caught two: ♀445 no amb.; ♂446 as skeleton only.

JESimpson, 1938

Perognathos intermedius

2650 ft., La Misión, 2 mi. w. Magdalena, Sonora

March 17, 1938

One, highly colored ♂ stub-tailed, taken at base of large saguaro in rocky, brush-filled arroyo (♂35).

775± ft., Tinajas de los Papajos, Sierra Pinacote, Sonora

March 22, 1938

Two pocketmice (♂44, ♂45) taken in dark lava field ¼ mi. sw Papagotanks (mostly ocholillo and creosote).

March 23, 1938

One (♀ 57, no emb) (60-68, JES) atop a rocky hill in a large, levely small-rock, ~~level~~ dark lava field; no others taken on the level field. The pouches contained many small seeds which were saved in MVZ pill box.

March 24, 1938

1000± ft., 2 mi. ne Tinajas de los Papagos, Sierra Pinacate, Sonora

Nine (60-68, JES) (One ♀ no emb) in coarse dark sand (cinders) at base of Syke's (?) crater. Creosote was dominant plant with few ocholillo and occasional mesquite. These nine taken in mousetraps (50 set out); none in 50 live-traps.

850± ft., Paso McDougal, Pinacate Region, Sonora.

March 25, 1938

Along east face of Sierra Hornaday (mazonite and granite) caught one ♂ and tail of another (skull broken of former).

50± ft., Punta Peñasca, Sonora.

April 1, 1938.

♂104 and ♂105 taken in lava on hill-side (on lee-side from bay and wind) in consecutive traps

Perognathus intermedius, continued.

50± ft., Punta Peñasca, Sonora

April 1, 1938, continued.

50 ft., apart; the former of very dark pelage and the latter of light pelage. A small cut (not big enough to be called an arroyo) 10-12 ft. wide was between the traps which lay: (just barely worth mentioning perhaps); the one catching the dark in dark lava; the trap of light mouse in lighter colored lava.

April 2, 1938.

♂108 taken on windward side of above-mentioned lava hill.

50± ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora

April 3, 1938.

♂109 and ♂110 caught in granite hills near bay of Gulf among ocotillo, creosote, and cholla.

1400± ft., 1 mi. ne Sonoita, Sonora.

April 10, 1938

♂140 and ♀141 (no amb.) caught among saguaro, pitayo, ocotillo, palo verde, and some cholla. Cheek-pouch contents saved.

1775± ft., 8 mi. s. San Luis, 34 mi. nw. Caborca, Sonora.

April 12, 1938.

Seven (♂145-48; ♀149-51 (no amb.); cheek-pouch contents saved) among palo verde and mesquite in rocky hills (the vegetation much heavier here than on level desert, also much saguaro, pitayo, ocotillo, nopal, and barrel-cactus.

Perognathus intermedius (continued)

1775± ft., 8 mi. s. San Luis, 34 mi. nw. Caborca, Sonora

April 13, 1938.

♀ no emb. 157 taken in area adjacent and similar to that of yesterday. Cheek-pouch ~~contents saved~~ empty.

1000± ft., 10 mi. nw Caborca, Sonora.

April 14, 1938.

♂ 161, 162; ♀ no emb. 163, 164 (cheek-pouch contents saved) taken among palo verde, creosote, and torote on rocky hill.

1100± ft., Cerro Cañedo, 2 mi. e. Caborca, Sonora.

April 16, 1938

♂ 171, 172, 173; ♀ no emb. 174 taken among palo verde, creosote, saquero, and nopal. Cheek-pouches empty.

950± ft., 5 mi. sw Las Alesnas, 23 mi. wsw Caborca, Sonora

April 20, 1938.

Seven (♂ 207-10; ♀ no emb. 211-13) taken among creosote, torote, ocotillo, and saquero on granite hill.

200± ft., 3 mi. n. Puerto de Lobos, Sonora.

April 22, 1938.

♂ 221 and ♀ no emb. 222 taken amdong white-brush and creosote along border of dark lava and light-sand. ♂ 221 was chewed up by red-and-black ants. Cheek-pouch contents saved.

100± ft., 1 mi. n. Puerto Libertad, Sonora

April 27, 1938.

One topotype (♂ 249) of P. l. lithophilus Huey among torote, palo verde, copal, and ocotillo on granite-hill.

Perognathus intermedius (continued).

500± ft., 2 mi. E. Punta Arenas, 75 mi. W. Hermosillo, Sonora.

May 9, 1938.

Six (327 as "skull only" as an Onychomys (probably) left only the head in trap; ♂ 328-330; ♀ 331 (3 emb) taken on rock-hill among ocotillo, pitayo, creosote, and torote. Cheek-pouch contents saved.

650± ft., Sierra Seri, 9 mi. W. Rancho San Javier, 70 mi. W. Hermosillo, Son.

May 10, 1938.

Five (♂ 334, 335 and ♀ 336-38 (no emb)) taken on rocky hill among torote, creosote, palo verde, and ocotillo. Cheek-pouch contents saved.

May 11, 1938.

Twelve (5 ♂ and 7 ♀; ♂ 345, 346 and ♀ 347 (4 embryos), 348 (5 embryos), 349 (no emb.), 350). taken on a rocky hill as above.

JESimpson,
1938.

Perognathus goldmani

1400±ft., 1 mi. N. Batuc, Rio Moctezuma, Sonora.

May 22, 1938.

♂408 taken on rocky hill-side above arroyo in very short grass and light brush. Specimen was [redacted] eaten by ants. Cheek-pouch contents saved.

1400±ft., El Ojito, 6 mi. NE. Suaqui, Sonora.

May 23, 1938.

♀ no amb. 413 taken in light brush on red-rock cliffside of arroyo. Cheek-pouch contents saved.

2550±ft., lava bed, mi. Moctezuma, Sonora.

May 24, 1938.

Four (♂418, ♂jv.419, ♀420 no amb., ♀421 no amb.) taken on side of black lava hill in thick brush. Mice have blackish pelage. Cheek-pouch contents saved.

May 24, 1938.

♀431 no amb. taken as above.

2300±ft, 1 mi. S. Moctezuma, Sonora.

May 26, 1938.

♂438 and ♂439 taken on dark lava hill in dense brush.

3400±ft., Arroyo Santa Rosa, 28 mi. N. Cumpas, Sonora.

May 28, 1938.

♂452 taken on rocky hill above wash in sparse vegetation of ocotillo, cholla, and "dead" brush. Cheek-pouch contents saved. Specimen was damaged considerably by ants.

JESimpson,
1938.

Dipodomys spectabilis

1900± ft., 16.7 mi. sw. Bamori, Sonora.

April 25, 1938.

Four (♂ 242, 243, 244; ♀ 245 no emb.) taken at mound sites among creosote, palo verde, palo fierro, and saquero. This constitutes, as far as known, the most southernly record of the occurence of this species in Sonora. (Cheek-pouch contents saved).

2600± ft., 20 mi. s. Santa Ana, Sonora.

May 14, 1938.

Twelve (3 ♂ with broken skulls, ♂ 360-62, and ♀ 363 one emb, 364-68 no emb.). taken at mound sites among grass and mesquite (rocky soil). ♀ 363-64 were moulting. Cheek-pouch contents saved.

2100± ft., 45 mi. N. Hermosillo, Sonora.

May 15, 1938.

Three (2 ♂ and 1 ♀; put up ♂ 381; ♀ 382 no emb.) taken at mound sites on tan-soil among grass, palo fierro, bara blanca, and mesquite. Cheek-pouch contents saved.

4700± ft., La Sauceda, 15 mi. NNE. Cananae, Sonora.

May 29, 1938.

One juvenile and ♀ 459, 460 2 emb 2 emb. taken on rolling grassland (overgrazed) between river bed and slopes. (cf. General Account, pp. 89-90, May 29, 1938).

JESimpson, 1938

Dipodomys merriami

2650 ft., La Misión, 2 mi. w. Magdalena, Sonora

March 17, 1938

Two taken in mousetraps (baited with oats and alpiste) in rock-sand wash. In the pouches of one (♂33) were very small, brown seeds and a little sand. (other, ♂34)

850±ft., Tinajas de los Papagos, Sierra Pinacate, Sonora

March 22, 1938

Two (♂46, ♂47) in mousetraps and one (♂48) in live-traps in the light sand washes which run thru the level, small rock lava field where Perognathus intermedius taken. Cheek-pouch contents of ♂48 saved; others empty.

850±ft., Paso McDougal, Pinacate Region, Sonora

March 25, 1938

In sand and bunch-grass and creosote caught 15 (♂'s 10 + 5 ♀'s no emb); put up two (♂73, ♂74); cheek-pouch contents saved. These caught near east base of Sierra Hornaday.

800±ft., Cerro Colorado, 28 mi. w. Sonoita, Sonora

March 26, 1938

In 50 mouse traps set among creosote in dark cinders which cover the tan desert sandy-soil in a thin layer caught 7: 4 ♂'s and 3 ♀ no emb. Put up one (♀76) which Dr. Benson had photographed along with a Perognathus intermedius and a P. penicillatus of the same section of desert. No embryos; cheek pouch contents saved.

Dipodomys merriami (continued)

900± ft., ½ mi. s. Crater Elegante, 34 mi. w Sonoita, Sonora

March 27, 1938

♂84 taken on bank of large, sand wash thru dark lava; vegetation there was of mesquite, ironwood, palouerde, and soft succulents. Nothing but bait in pouches.

675± ft., 3 mi. s. Cerro Colorado, 28 mi. w. Sonoita, Sonora.

March 30, 1938

Three (3♂♂; nothing in pouches) taken in sand among mesquite and creosote. Outside mesquite area in creosote and sand two more taken in live-traps; turned loose.

50± ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora.

April 3, 1938.

♂115 taken in crushed-granite between granite-hills and sand among ocotillo, creosote, and cholla. (Cheek-pouches empty.)

April 4, 1938.

♂120 taken in large wash thru granite hills; Cheek-pouches empty.

April 5, 1938.

♂122 and 2♀♀ (nonemb.) caught in sandy wash among ocotillo and cholla. Cheek-pouches empty.

April 6, 1938.

7 taken in sand dunes among a scrub-grass and some creosote. The party catch numbered nineteen (12♂♂ and 9♀♀ (noemb.)); some of these taken among cholla and ocotillo. The cheek pouch contents were

Dipodomys merriami (continued).

50± ft., Cerro La Cholla, 6 mi. wnw Punta Peñasco, Sonora,

April 6, 1938, continued.

saved; much of this material consisted of small, white, onion-like tubers which have been found once or twice before in the pouches. These tubers may have come from the many small pits found dug in the sand dunes along my trap-line.

100± ft., Cerro Prieto, 6 mi. nw Punta Peñasco, Sonora.

April 7, 1938.

30♂'s and 1♀ (no emb.) caught among creosote-like brush in sand at edge of dark lava hill. Cheek-pouch contents were saved.

350± ft., Batamote, Rio Sonoita, 39 mi. wsw. Sonoita, Sonora.

April 8, 1938.

30♂'s and 2♀'s (no emb.) taken among mesquite and creosote in sand along banks of river. Total for party was 13 (7♂'s; 6♀ no emb.). Cheek-pouch contents were saved.

1400± ft., 1 mi. ne. Sonoita, Sonora.

April 10, 1938.

Only 1♂ and 1♀ (no emb.) caught from 50 mouse-traps placed in dense mesquite near Rio Sonoita. The dense mesquite provide food and over-head cover, but the lack of ground cover (due to over-grazing and the density of mesquite) and periodic flooding probably account for scarcity of rodents.

continued.

Dipodomys merriami (continued).

1400± ft., 1 mi. ne Sonoita, Sonora.

April 10, 1938, continued.

Contrasting with the above was the catch of 14 Dipodomys merriami (8♂; 6♀ no emb.; cheek-pouch contents saved.) from 23 mousetraps set in the sand and sage(?) area bordered by the dense mesquite. The ground cover is heavy between the typical kangaroo-rat area and the dense mesquite; here with open ground and an abundant food supply the rats abound. The rats are here (as in other places seen) most abundant in more or less open ground; this may be correlated with the large eyes and expanded bullae of the rat.

900± ft., 1.6 mi. sw Las Alesnas, 20 mi. wsw. Caborca, Sonora

April 18, 1938

Caught 15 among creosote in sand; put up 5♂: 188-192; Dr. Benson put 5♀'s; the party catch totaled 48: 30♂ and 18♀; cheek-pouch contents saved.

April 19, 1938.

Caught 4♂ and 2♀ along same trapline as yesterday; none taken in live-traps in similar area. Cheek-pouch contents saved.

200± ft., 3 mi. n. Puerto de Lobos, Sonora.

April 22, 1938.

♂225, 226 and ♀ 227, 228 no emb. caught among white-brush and creosote at border between dark lava and light sand. Pouches only bar

Dipodomys merriami (continued)

900± ft., 13 mi. sw Caborca, Sonora.

April 23, 1938.

Nineteen (10 ♂♂ and 9 ♀♀'s; put up ♂♂ 234-38) taken among grass, creosote, palo verde, and cholla. Cheek-pouch contents saved.

1900± ft., 16.7 mi. sw Bamori, Sonora.

April 25, 1938.

Eleven (8 ♂♂'s and 3 no emb ♀♀'s) taken among creosote, palo verde, palo fierro, and saguero on rocky, gravel-soil. Cheek-pouch contents saved.

20± ft., Punta Cirio, 5 mi. s. Puerto Libertad, Sonora.

April 28, 1938.

4 (♂♂ 256-59) taken among bunch-grass (?) and torote on sand dunes. Cheek-pouch contents saved.

650± ft., 11.3 mi. w. Hermosillo, Sonora.

May 1, 1938.

Three males taken on tan, sandy soil among grass, palo verde, palo fierro, and mesquite. (Cheek pouch contents saved.).

50± ft., 3 mi. SE. Punta Arenas, 25 mi. w. Hermosillo, Sonora

May 8, 1938.

Two (♂♂ 324 and ♀ no emb. 325) taken on rocky ground among creosote, torote, and ocotillo. Cheek-pouches empty.

2600± ft., 20 mi. S. Santa Ana, Sonora. May 14, 1938.

One juvenile and ♂♂ 369 taken on rocky soil among grass and mesquite.

Dipodomys merriami (continued).

2100± ft., 45 mi. n. Hermosillo, Sonora.

May 15, 1938.

Five (2♂♂ and 5♀♀; put up ♂♂ 383-84) taken on tan-soil among grass, palo fierro, bara blanca, and mesquite. Cheek-pouch contents saved.

1400± ft., 1 mi. N. Batuc, Rio Moctezuma, Sonora.

May 22, 1938.

One juvenile (not saved) taken on very short grass and light brush on rocky hill-top above arroyo.

Dipodomys deserti

900± ft., ½ mi. S. Crater Elegante, 34 mi. W. Sonoita, Sonora

March 27, 1938

Along the banks of large wash thru lava among ironwood, palo verde, and ocotillo ♀ 85 caught in small mousetrap.

350± ft., Batamote, Rio Sonoita, 39 mi. WSW. Sonoita, Sonora

April 8, 1938.

1 ♂ and 1 ♀ (no emb.) caught among mesquite and creosote in sand along bank of the river. Cheek-pouch contents saved. Two other ♂♂ taken by party.

300± ft., 7 mi. ESE Rancho Libertad, Sonora.

May 12, 1938.

Two (♂ 358; ♀ 359 (no emb.)) taken on sand among mesquite. Cheek-pouch contents saved.

JESimpson, 1988

Onychomys torridus

675±ft., 3 mi. s. Cerro Colorado, 28 mi. w. Sonoita, Sonora.

March 30, 1938

♂94 taken in sand among mesquite and creosote. The mouse showed by three (½-3 sq. cm) pigmented spots that it was moulting.

900± ft., 1.6 m. sw Las Alesnas, 20 mi. wsw Caborca, Sonora.

April 18, 1938.

♀187 (no emb.) caught among creosote in sand.

20± ft., Puerto de Lobos, Sonora

April 21, 1938.

♂216, 217 and ♀218, 219 (3 emb. 4 emb.) caught among sand-brush, torote, and cholla on sand dunes. ♂216 was moulting.

900± ft., 13 mi. sw. Caborca, Sonora.

April 23, 1938.

♂232 and ♀224 (no emb) caught among grass, creosote, palo verde, and cholla.

20± ft., Punta Cirio, 5 mi. s. Puerto Libertad, Sonora.

April 28, 1938

Five (4 juveniles and ♂255) taken among bunch-grass(?) and torote on sand dunes.

650± ft., 11.3 mi. w. Hermosillo, Sonora.

May 1, 1938.

♂267 and ♀268 (3 emb.) taken on tan, level, sandy soil with sparse grass among palo verde, palo fierro, and mesquite trees. ♂267 was moulting.

Onychomys torridus (continued).

2100± ft., 45 mi. N. Hermosillo, Sonora.

May 15, 1938.

♂ 380 taken on tan-soil among grass, palo fierro, bara blanca, and mesquite.

2700± ft., Rancho Banachari, 10 mi. N. Matape, Sonora.

May 21, 1938.

♂ 407 taken in very short grass and light brush on rocky hill.

JESimpson,
1938

Reithrodontomys

650± ft., 11.3 mi. w. Hermosillo, Sonora.

May 1, 1938.

♂ 260 and ♀ 261, 262 (no emb.) taken on level, tan, sandy soil with sparse dry grass among palo verde, palo fierro, and mesquite trees. The species of these mice is not known; Dr. Benson suspects these as new species.

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938.

Seven in mouse-traps and three in live-traps (♂ 270-74; ♀ 275 (one emb.), 276 (no emb.)) taken in wheat-field - bordered by corn field and mesquite. Dr. Benson suspects these harvest-mice as a new species. They are probably the same as the three (♂ 260 and ♀ 261, 262) mentioned above from 11.3 mi. w. Hermosillo.

May 3, 1938

Fifteen taken in mousetraps (6 ♂ and 3 ♂) and live-traps in wheat and corn fields (not saved).

J E Simpson,
1938.

Peromyscus leucopus

4650±ft., 2.3 mi. S. Santa Cruz, Sonora.

May 30, 1938.

♂ 461 taken in river-bottom in willow-brush as was another in a live-trap—turned loose.

JE Simpson
1938

Peromyscus eremicus

2650 ft., La Misión, 2 mi. w Magdalena, Sonora

March 17, 1938

Seven taken in mousetraps on rocky hill, in rocky arroyo, and in rock-sand wash. One was a juvenile; several badly eaten at ears, mouth, and feet by ants. Three (3) of the seven put up as study-skins: ♀ 38, ♀ 39, ♀ 40.

March 18, 1938

Twelve taken in mousetraps (8♂; 4♀) on rocky hillsides and saguaro "forest"; none put up.

775± ft., Tinajas de los Papagos, Sierra Pinacate, Sonora

March 22, 1938

Four in mousetraps on rocky hills and in level, dark lava field adjacent; two were very dark like the dark pocket mice. Three ♂; one ♀ no emb; none as study skins.

March 23, 1938

Two in mousetraps in level dark lava field near the edge of the Papagotanks wash (2 ♂; not put up.) Both were lighter than the dark ones from far out in lava fields.

850± ft., Paso McDougal, Pinacate Region, Sonora.

March 25, 1938

In mazonite and granite on east face of Sierra Hornaday caught 9: 5 ♂♂ + 2 ♀♀ no emb.; put up two: ♀ 69, ♂ 70.

900± ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora

March 27, 1938

Six (4 ♂ + 2 ♀ no emb.; put up ♀ 80 no emb, ♂ 81, ♂ 82, ♀ 83 no emb) in small wash.

Peromyscus eremicus (continued)

<u>900±ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora</u>

March 27, 1938, continued.

thru the lava field; plants here are palo verde and mesquite, mainly.

March 28, 1938

The second night of aforementioned trap-line netted only one mouse (♂); not put up. Another taken farther up the wash on similar ground in live-traps; of which was turned loose —— ran over the lava, once started by shooing, without stopping for cover or survey.

<u>1100±ft., Crater Elegante, 34 mi. w. Sonoita, Sonora.</u>

March 29, 1938

Three (2♂♂ + 1♀ no emb.) on rim of crater among ochotillo and creosote. Two (1♀ no emb. and 1♂) taken on red-lava hill at south rim of crater among sparse cholla and ochotillo.

<u>50± ft., Punta Peñasca, Sonora.</u>

April 1, 1938

2♂♂ plus ♂ 106 taken in lava on lee-side of hill from bay of Gulf; the latter of lighter pelage than those taken by party here and elsewhere.

April 2, 1938

12 (8♂♂; 4♀'s [no emb]. on windward side of above mentioned lava hill; none saved.

<u>50± ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora.</u>

April 3, 1938.

A ♀ plus ♂ 112 and ♀ 113 no emb. taken on granite hill among creosote, ocotillo, and cholla.

Peromyscus eremicus (continued).

50± ft., Cerro La Cholla, 6 mi. wnw. Punta Peñasco, Sonora.

April 4, 1938.

♀118, 119 (no emb.) along banks of wash thru granite hills. (cholla, ocotillo, creosote).

April 5, 1938.

30♂'s and 1♀ (no emb.) caught in granite hills among ocotillo and cholla.

100± ft., Cerro Prieto, 6 mi. nw Punta Peñasco, Sonora.

April 7, 1938.

♀131 (no emb.), ♀132, and ♂133 taken in dark lava rocks of rock-hill (some ocotillo and cholla).

1400± ft., 1 mi. ne Sonorta, Sonora.

April 10, 1938.

♂142, ♀143 (2 emb.), and ♀144 (no emb.) caught among saquero, pitayo, ocotillo, palo verde, and cholla. The ♂142 (small) at first thought to be P. crinitus, but Dr. Benson decided not after looking at the skull and comparing it with other Peromyscus.

1775± ft., 8 mi. s. San Luis, 34 mi. nw. Caborca, Sonora.

April 12, 1938.

♂152, 153 and ♀154, 156 (no emb.) taken among palo verde, creosote, saquero, pitayo, ocotillo, and others of this heavier than desert floor vegetation.

April 13, 1938.

40♂'s taken in area adjacent and similar to that of yesterday.

Peromyscus eremicus (continued).

1100± ft., Cerro Cañedo, 2 mi. e. Caborca, Sonora.

April 16, 1938.

Six (♂175, 176, 177, 178; ♀179, 180 no emb.) taken on steep, rock-hill near Rio Altar; vegetation sparse: palo verde, creosote, ocotillo, and nopal.

950± ft., 5 mi. sw Las Alesnas, 23 mi. wsw Caborca, Sonora.

April 20, 1938.

♂206 and 3♀'s no emb. taken among creosote, torote, ocotillo, and saguaro on rotten-granite hill.

200± ft., 3 mi. n. Puerto de Lobos, Sonora.

April 22, 1938.

Six (saved 2: ♂223; ♀224 no emb) caught among white-brush and creosote at borderline between dark-lava and light-sand.

300± ft., 3 mi. nnw Puerto Libertad, Sonora.

April 26, 1938.

Three (♂, v. 246; ♀247, 248 no emb. 2 emb.) taken among creosote, torote, ocotillo, and copal on granite-hill. Both ♀ had well-developed mammae.

100± ft., 1 mi. n. Puerto Libertad, Sonora.

April 27, 1938.

Five (3 juveniles and ♂250; ♀251 no emb.) taken among torote, palo verde, copal, and ocotillo on granite-hill.

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 2, 1938.

♂279 and ♀280 2 emb. taken in wheat-field bordered by corn-field and mesquite.

Peromyscus eremicus (continued).

270± ft., Rancho de Costa Rica, Rio Sonora, Sonora.

May 3, 1938.

One juvenile taken in cornfield bordered by wheat-field and mesquite (not put up).

50± ft., 3 mi. SE. Punta Arenas, 75 mi. W. Hermosillo, Sonora.

May 8, 1938.

One ♂ taken on rocky ground among creosote, torote, and ocotillo — not saved.

500± ft., 2 mi. E. Punta Arenas, 75 mi. W. Hermosillo, Sonora

May 9, 1938.

Eight (♂ 332) taken on rock-hill among ocotillo, pitayo, torote, and creosote.

650± ft., Sierra Seri, 9 mi. W. Rancho San Javier, 70 mi. W. Hermosillo, Sonora

May 10, 1938.

♂ 341, 342 taken on rocky hill among torote, creosote, palo verde, and ocotillo.

2400± ft., Sierra de Mazatan (E. slope), 6 mi. N. Nacori, Sonora.

May 20, '38: Six (♂ 396, 397, 398 (2 emb.; no emb.); 2 ♂♂ and 2 jv. not saved) taken on mt-side among granite boulders in grass, heavy brush, and trees.

2700± ft., Rancho Banachari, 10 mi. N. Matape, Sonora.

May 21, 1938.

♂ 406 taken in very short grass and light brush on rocky hill.

1400± ft., El Ojito, 6 mi. NE. Suaqui, Sonora. May 23, 1938.

♀ 414 (2 emb.) and ♀ 415 (no emb.) taken in light brush on red-rock cliff-side of arroyo.

Peromyscus eremicus (continued)

2550±ft., lava bed, mi. Moctezuma, Sonora.

May 24, 1938.

Four (♂422, ♀423 no emb, ♀424 emb, ♀425 emb) taken on side of dark lava hill in thick brush. Two others (not saved) taken on top of same hill in light brush. ♀425 was moulting.

May 25, 1938.

One taken on side of dark lava hill in dense brush. (not saved)

One taken on tan-rocky hill above arroyo in light brush a few hundred yards from dark lava hill. (not saved).

2330±ft., 1 mi. S. Moctezuma, Sonora.

May 26, 1938

Six (♂440, 441) taken on dark lava hill in dense brush.

May 27, 1938.

One as above on dark lava hill-side; on this hill's top in light brush caught seven (saved: ♂449, ♂450).

~~3400±ft., Arroyo Santa Rosa, 28 mi. N. Cumpas, Sonora.~~

May 28, 1938.

Nine (4 juveniles and one ant-fodder; saved: ♂455; ♀456 emb, 457 emb, 458 emb.

JESimpson, 1938

Peromyscus crinitus

850± ft., Paso McDougal, Pinacate Region, Sonora

March 25, 1938

In mazonite and granite rocks on east face of Sierra Hornaday caught 2: ♂71, ♀75. no emb.

1100± ft., Crater Elegante, 34 mi. w. Sonoita, Sonora.

March 29, 1938

In grey rock and cinders on rim of crater ♂90 taken among creosote and ochotillo. Inside rim in large rocks among creosote, cholla, and some ochotillo ♂91 taken; the latter mouse was of much lighter pelage than those taken in this area. On east face of red-lava hill just s. of crater rim among cholla (sparse) and ochotillo 2 dark mice taken (♂92, ♀93). no emb.

50± ft, Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora.

April 3, 1938.

♂111 taken in granite hills near bay of Gulf among creosote, ocotillo, and cholla.

April 4, 1938

♂117 among creosote, cholla, and ocotilla along bank of wash thru granite hills.

JESimpson, 1938

Neotoma lepida

775±ft., Tinajas de los Papagos, Sierra del Pinacate, Sonora

March 24, 1938

From 21 traps set in large, dark-lava boulders along wash at the tanks took 2 N. l. bensoni (♀58 no emb; ♀59 one emb).

50±ft., Punta Peñasca, Sonora.

April 1, 1938.

♂107 taken in large lava rocks on lee-side of hill from bay of Gulf. The pelage was much lighter and more highly colored than others seen — being orange-tan, light-tan, and golden-tan.

50±ft., Cerro La Cholla, 6 mi. wnw Punta Peñasca, Sonora.

April 3, 1938.

♀116 (no emb.) taken in granite blocks of hill near bay of Gulf among creosote, ocotillo, and cholla. Houses in rocks made up of parts of the above plants — much cholla spines among it.

April 5, 1938.

♂123 and ♀124 caught among ocotillo and creosote on granite hills. The male had very light colored pelage.

100±ft., Cerro Prieto, 6 mi. nw Punta Peñasca, Sonora

April 7, 1937.

♂134, ♂135, and ♀136 (no emb.) taken in dark lava rocks on hill (some ocotillo and cholla).

950±ft., 5 mi. sw Las Alesnas, 23 mi. wsw Caborca, Sonora

April 20, 1938.

Five (2 jr ♂ and ♂203, 204; ♀205 no emb.) among creosote, torote, ocotillo, and saquero on granite hill; bot-fly larvae on all five throats.

JESimpson, 1958

Neotoma albigula

900± ft., ½ mi. s. Crater Elegante, 34 mi. w. Sonoita, Sonora.

March 27, 1938

Along bank of small wash thru lava among palo verde and ochotillo ♀86 (noemb) taken in mousetrap.

March 28, 1938

Second night of above trap-line netted two ♂'s in mousetrap; ♂87 put up.

50± ft., Cerro La Cholla, 6 mi. wnw Punta Peñasco, Sonora

April 4, 1938

♀121 (no amb.) and a juvenile ♂ taken among ocotillo and creosote, and cholla along banks of wash thru granite hills.

April 5, 1938.

♀125 (no amb.) taken in same trap at same large rat-house as above juvenile ♂ taken yesterday.

1775± ft., 8 mi. s. San Luis, 34 mi. nw. Caborca, Sonora.

April 12, 1938.

♂155 taken among palo verde, creosote, palo fierro, ocotillo, and nopal in rocks on bank of wash.

1000± ft., 10 mi. nw Caborca, Sonora.

April 14, 1938.

♀159, 160 (no amb) taken among palo verde, creosote, and torote on rocky hill; both had bot-fly larvae on throats.

1100± ft., Cerro Cañedo, 2 mi. e. Caborca, Sonora.

April 16, 1938.

♂181 and ♀182 taken among palo verde, creosote, ocotillo, and nopal in large rocks of rock-hill near Rio Altar.

Neotoma albigula (continued).

200± ft., 3 mi. n. Puerto de Lobos, Sonora.

April 22, 1938.

♂ 229 caught among white-brush and creosote at border of dark-lava and sand.

500± ft., 2 mi. E. Punta Arenas, 75 mi. W. Hermosillo, Sonora.

May 9, 1938.

Two juveniles taken on rock-hill among torote, ocotillo, pitayo, and creosote.

650± ft., Sierra San, 9 mi. W. Rancho San Javier, 70 mi. W. Hermosillo, Sonora.

May 11, 1938.

Four (♂ 354, 355, 356 and a juvenile) taken on rocky hill among torote, creosote, palo verde, and ocotillo.

2550± ft., lava bed, mi. Moctezuma, Sonora.

May 24, 1938.

♀ 426 (juvenile) taken on side of dark lava hill in thick brush. This juvenile of black pelage.

J.E. Simpson,
1938.

Sylvilagus

6 mi. N. Nacori,
2250± ft., Sierra de Mazatan, Sonora.

May 19, 1938.

Shot ♀ 392 (2 emb.) at dusk at wash thru granite boulders among grass, heavy brush, and trees.

JESimpson,
1938.

Odocoileus couesi

2400±ft., Sierra de Mazatan (E. slope), 6 mi. N. Nacori, Sonora.

May 20, 1938.

Picked up skull (399) only from post-rotten, much-scattered carcus of small white-tail among granite rocks in grass, heavy brush, and trees.

A mile ± south of above-mentioned mt. slope in dry-grass glade was surprised (missed three shots) by three antlerless white-tails — large (100±lbs) and a medium (75±lbs.) together and a small (50± lbs) one 20 yards from pair. They ran swiftly and smoothly without the high bounding run of the black-tails of California. The light tan color blended well into the dry-yellow-grass ground-color.

On the way to the mountain an hour or so earlier (about dawn) caught a brief glimpse and a tail flash of a deer in the jungle-brush of the foothills.

(cf. General Notes (account) pp. 79–80 for notes of Mexican farmer method of deer control.)